Basilenterus, I. March 29, 1960
Cerro Punta.

Just a few words about the Black-crested Warblers = ~~xxxxxxx~~ = melanogenys. Re its role in mixed flocks.

Black-crested Warblers are certainly gregarious, and often associated with mixed flocks; but I do think that they may tend to keep to themselves as much as possible. We have frequently seen little groups of 3 or 4 Black-crested Warblers going around by themselves, sometimes by themselves. Sometimes more or less near birds of other species, but usually ignoring the latter.

The Black-crested Warblers are very noisy little birds, but still quite difficult to see most of the time. They are quite skulking and usually moving about quite low (much lower than the Chlorospingus birds), and often in the interior of shrubbery.

The Black-Crests seem to utter a "song" which appears to be composed of a few CV's, followed by a Trill or R, and (usually) followed by 1 or 2 more CV's — — — — ~~xxxx~~ —
It is this vocalization which is so reminiscent of the Rooty Caps.

Basilenterus, I April 15, 1961
Cerro Punta

During the course of my observations of other species during the last few days, I have caught some brief glimpses of the behavior of Black-crested Warblers (mostly in the area half way between Cerro Punta and the upper pastures).

I have heard one bird utter a quite a prolonged R while it was

Bairdi centorius, Apr. 15, 1901, II. (2)

ed another bird in an aerial chase.

I have also heard quite a lot of "songs" by these birds. Yesterday morning, for instance, 2 birds (presumably mates) were flitting about in the conifers, more or less together. One or both birds uttered song phrases which were more or less consecutive: "Tsit tsit ta-whit-hee-yoo" or "Tsit tsit ta-whit-hee-ee-yoo" Sometimes an extra "Tsit-hee-yoo" tacked on the end. The last part of these songs (the "ta-whit-hee-yoo-" and anything afterwards) was usually rattled off in effect. Both birds also uttered a lot of "Tsit" CN's before and after the song phrases (and the initial notes of the song phrases themselves were probably nothing more than "Tsit" CN's).

There were no special postures or movements accompanying these song phrases.

I think I also heard one bird utter a slightly different song a couple of days ago in a different area. Perhaps consecutive: "Tuh tuh tuh-tuh sreeeeeeeee-ee-ya".

— — —

Bairdi centorius, I. April 16, 1902
Cerro Punta

7:20 a.m. Some where apparently single bird feeding low in blackberry near upper pasture. Uttering song phrases at more or less irregular intervals. Rapid and twittering in effect. "Bare" phrase perhaps "Tuh-uh-tasece-tasece" Sometimes abbreviated. Sometimes lengthened, usually by insertion of one or two thin and high-pitched, R's toward end. These songs were not accompanied by special postures or movements. Just a variety of feedin

**** good/or unnaturalized pre-flight postures

Basileuterus, I April 17, 1962
Ceno Punta

Working just below upper pasture again.

6:50. Watching a single Black-cheek feeding. Not the same bird that I watched yesterday. Feeding almost all the time not actually pecking at or swallowing food. Twittering phrases. Usually including some R(s). Generally ending in at least a trace of an "seeyoo" sound. Sometimes abbreviated. Sometimes reduced to a bare "tit tit seeyoo".

This species does not seem to sit motionless on a station to sing. Why? Perhaps it needs to get so much food so early in the morning that it cannot afford to delay.

This bird did not utter anything in the way of CN's.

But it did do a lot of flicking. Many WF's Possibly even more frequent than TF's ??? Also many TF's. Largely or almost completely vertical. Probably both V-D and D-V.

October 30, 1962
Bolivia

SEE ALL OF NOTES ON GENERAL MIXED FLOCKS THROUGHOUT THIS TRIP. Especially today's.

I am becoming convinced that Basileuterus, Hylophilus, and Chlorospingus are all closely related to one another. General proportions, color pattern, Rattles, Flourishes, etc. One might

Baulenteres, Oct. 30, 1963, II

but features they have in common is DC composed of melospyledobic notes. Probably all related to Atlapetes.

Baulenteres, I

January 27, 1964
Moro

8:15 a.m. Apparent dispute between 2 nigrocristatus. Two birds come flitting with great speed thru low thick scrub, 3-4 ft above ground. Uttering lots of loud hard metallic "Tuck" notes. In rapid but irregular series. Then seem to be SHN's. Also one burst 2 or 3 Hoarse Notes (probably with rattle undertone). Then calm down a little. Continue flitting about, but somewhat less rapidly. One or both begin(s) to utter many of the R's which seem to serve this species as song. I shall call these vocalizations "Song R"s. Accelerating

— — — — — — — —

I am not sure if each note of the Song R should be transcribed as "Tut" or "Tuck". End of each Song R phrase seems to be brief "ceyoo".

Song R's quite reminiscent of both Rattle-Hoarse performances of BCBT and accelerating "song" of Green-backed Sparrow.

As far as I could tell, there was little or nothing in the way of ritualized postures or movements (except flicking) during this encounter. Possibly one bird was unusually fluffed, underneath, at least part of the time.

Dubusia, I

May 29, 1960
Cano Pulmicha.

During the last few days, we have caught several glimpses of a peculiar bird here, in the hedges where we have been studying so many other species.

The only description I can give is vague. The back & wings appear to be black, with some blue in the wings (at least). The head is black with broad white or (possibly) pale blue superciliary stripes. The throat is light brown or buffy, as are the sides of the breast. The belly is yellow, the yellow color coming up to a point in the middle of the breast.

NOTE: July 23, 1960. This species is, in fact, Dubusia taeniata = [illegible]

We caught one glimpse of a pair of birds together, one afternoon. They were fairly low, on the outside of a hedge.

Aside from this we caught one glimpse of an apparently single bird singing, quite high in a tree above a hedge. This song consisted of 2 long (most un-tanager-like) whistles. Very reminiscent of the Blue Solitaire in quality! Piercing and metallic — but not flat like the Solitaire.

We have heard identical songs quite frequently, every day in the mornings and evenings, without being able to actually see the singing bird.

Dubussia, I — May 31, 1960
Cerro Pichincha

Today we watched birds a little lower than usual on the mountain, near Nono (see today's notes on Diglossopis). There is apparently only one pair of Dubussia (manager) here. We see one or both birds either in high in trees, or moving fairly low in hedges (presumably feeding).

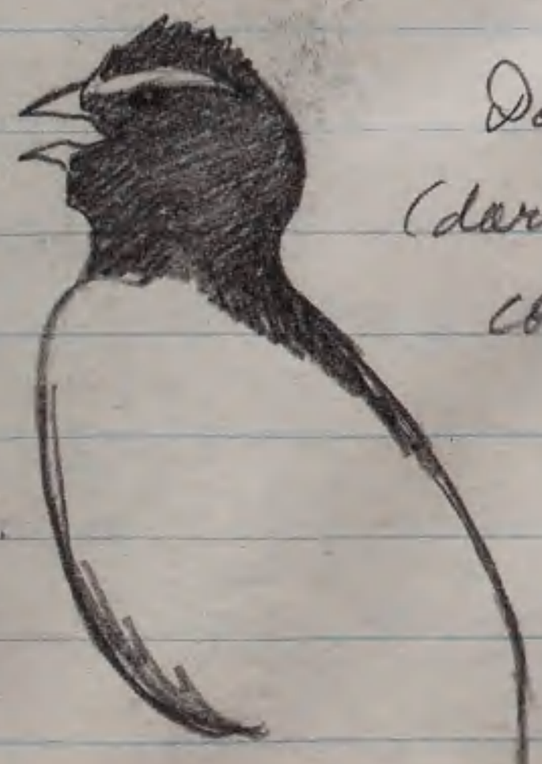
David watched the two birds of the pair feeding in a hedge this morning. Quite silent most of the time. But then, when one bird approached the other quite closely, one or both birds uttered a soft "Zee wee zee wee zee wee zee wee ....." Presumably as "greeting".

This would appear to be quite reminiscent of Emb-finches such as Catapetes.

Dubussia, I — June 1, 1960
Cerro Pichincha

Worked near Nono again today.

Watched one bird singing. We did not get a very good view of him, but his singing posture was more or less comme ça:



Yellow bill.

Belly feathers quite fluffed.

Definite CR
(dark feathers quite conspicuous).

His rough thumbnails were quite as described above on p. 1. This bird did all his singing while perched quite high in Eucalyptus trees. Quite alone at the time (although he joined his mate a little while later). This would suggest that his songs were produced by some thwarting of a pairing and/or sexual drive(s).

This bird also uttered quite a lot of CN's. "Seeee" Notes. Often uttered in fairly long series. "Seeee Seeee Seeee Seeee...." In flight; and also when perched just before, or between, flights. The tonal quality of these notes is quite distinctive. Quite musical and rather plaintive-sounding.

Dubusia I

June 2, 1960
Cerro Pichincha

Working near Hono again today.
I got a fairly good but very brief view of one of these birds feeding in a hedge today

Big-headed, "chunky", bird

Black tip to bill?

This bird was quite silent when feeding. I never actually heard a single "Seeee" Note of the species today. Perhaps a bird only utters "See eee"s when it wants to call in its mate

There is no doubt but that this species still is rather low in abun

Sobbing almost all the time — except when (the presumed ♂'s are) singing. I still think it may be a finch.

Dubuque, I

May 29, 1961
Cerro Gordo

Working near Iowa this morning, in exactly the same place as last year. The same birds seem to be around this year

One (at least) of the birds uttered a lot of whistles this morning. Just like those described above on May 29, 1960, p. 1. Always arranged in doublets. Each doublet might be roughly transcribed as "Whaaaa-hoooo". (I shall call each doublet "WH" from now on.)

When I first arrived in the area this morning, around 6:15 a.m., one of the birds was uttering WH's very frequently so frequently, in fact, that they formed a sort of "dawn song." Quite like the "dawn songs" of other tanagers, saltators, & buntings, except that each note of a WH is longer than the notes of the "dawn songs" of other species, and the pauses between WH's are usually or always longer than the pauses between the notes of the "dawn songs" of other species. It is obvious that the series of WH's uttered by these Dubuques are essentially indeterminate in length.

Unfortunately, I was never able to see the bird(s) uttering the WH "dawn song" this morning. But all these songs appeared to be coming from high in the trees. Not associated with any other vocal pattern(s).

The WH "dawn songs" were most frequent early in the morning. Almost stopped by about 8:00 a.m. But I heard a few addit

usual WH's, from time to time, as late as 9:30 a.m.

Some time in the middle of the morning, after the WH "da wn songs" had declined, I heard a Dubrusia utter a lot of calls which were quite strikingly reminiscent of the 2-Note "songs" of Psaltriparus !!! Somewhat variable Essentially composed of doublets. Usually 3, 3 1/2, 4, or 4 1/2 doublets in a series. More or less comme ça:

Organization

Possibly Song

"Tseewaa tseewaa tseewaa tseewaa tsee" or
"Tseewaa tseewaa tseewaa" or
"Tseewaa tseewaa tseewaa tsee"

Obviously determinate in length

I think I shall call each "Tseewaa" Note "TW" from now on.

The bird uttering these TW "songs" was usually perched fairly low, but in a rather exposed position. Probably in an inverted alyed posture. Almost certainly separated from mate

Both the WH and TW "songs" may be produced by outward ed pairing drive. The WH may be higher intensity than the TW, produced when the pairing drive is stronger and/or when the bird is further away from its mate

Very late this morning, I watched a Dubrusia feeding in a hedge. Probably near its mate, (although I never managed to see the 2 birds together) Twice, it uttered thin, high, soft "Zeee zeeee zeeeee" Notes as it flew away from me. These may have been the same as the "feeee" CN's described above on June 1, 1900, but today I wondered if they could be AECN's? (I also wonder if these are the same as "Zee wee...." Notes heard by D. F on May 31, 1900???) As far as I could tell, today, all the "Zeeee"

Dubumia, May 20, 1961, III.

### Notes were uttered in flight.

Dubumia, I — May 17, 1962
Pitchmelia

Working near Mono again this morning. Arrive at dawn. Raining at first, but gradually clearing.

Could hear Dubumia WH's as soon as it became light. But not one of the first birds to sing around here.

6:45 a.m. Watching a single bird uttering lots of WH's as it moved through thicket along ravine and then along a hedge (quite low while in ravine thicket, but moving higher into trees when it got to the hedge). All WH Notes just as before. (They really seem to be remarkably invariable), uttered in indeterminate order. It seems quite possible that each WH is homologous with a single, trisyllabic note of the DC of other species). Pauses between notes hardly longer than notes themselves. Uttered from a great variety of unritualized perching and pre-locomotor postures (including up a sort of forward crouch). Without CR. Bird occasionally fed between notes.

Same bird still uttering WH's 6:55, but now out of sight.

I might mention, for clarity, that these WH's do not sound like most DC Notes, on first hearing, simply because they are much louder, not at all flute-like, and so invariable. (I.E. the tone is distinctive, although the actual form of the pattern is not.)

I go away for a walk and then return 7:53 a.m. Probably same bird in same place still uttering WH's. This is certainly not

a pure dawn pattern

Bird still continuing 8:12 a.m. Only occasional pauses to interrupt the series. Finally stops a few minutes later. Possibly frightened off by me.

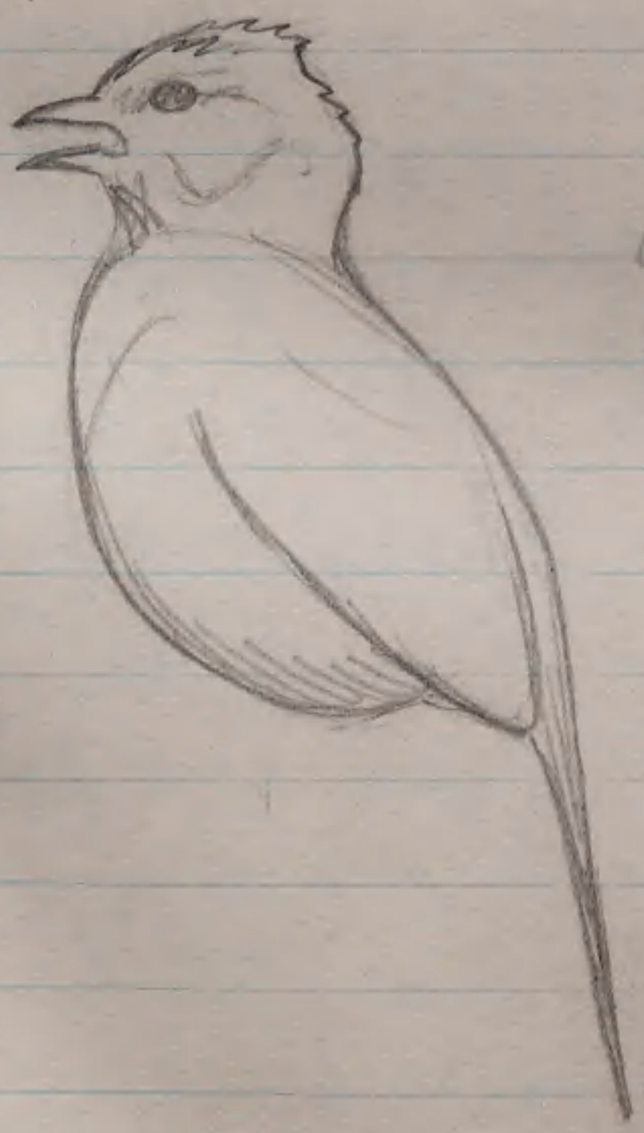
I worked at Ilono again this afternoon — but didn't hear the slightest trace of any Dubusia WH's.

Dubusia, I

May 22, 1962
Pichincha

Working near Ilono again this afternoon. Better weather than on May 19.

Hear a brief burst of WH's, 3:58 p.m.



Bill quite long

Another burst of WH's 4:50 p.m. Quite long sustained. By single bird. Sitting high in eucalyptus. Using 2 or 3 perches. Part of the time sitting in erect, front-ways. Upright. Sometimes with belly fluffed. Apparently with CR as in drawing. (Possibly feathers of crown raised just as notes are uttered)

After several minutes bird flies off to utter WH's in a distant tree

Dubruna, I. May 23, 1962
Peluncla

Working near Nono this morning.
5:55 a.m. One brief burst of WH's. Over almost immediately. Started again c. 6:05 a.m. Has continued quite a long time.
7:05 a.m. Get a very good view of the burst uttering WH's from a very low perch, less than 6 ft above ground. No CR of any type! Head just rounded on top (lots of black visible)
This bird appears to be quite unmated this year!
It certainly has a definitely favored series of stations. Which it uses to visit more or less in the same order time & again
Back at Nono 3:00 p.m. Cloudy & overcast now
Hear burst series of WH's, 3:25 Again a few minutes later

Dubruna, I September 29, 1962
Páramo de Guasca

This morning, between appx. 5:45 and 9:00 a.m., I heard quite a lot of WH's like those of the Nono Dubrunas. I may also have caught a glimpse of a single Dubruna with a large unusual flock (see today's notes on subject)

Dendroica, I

July 11, 1959
Ceno Campana

~~xxxxx~~ = Dendroica dominica = Black and Yellow Savanger.

I saw a pair of these today. In one of the mixed "feeding associations" (see today's General notes). Very active, flying about more or less like a warbler.

The only other bird of this species I ever saw (last year) was also in a mixed flock or "feeding association". In exactly the same place as the birds I saw today.

The general effect of this species is quite distinctive

The only behavior I saw the birds perform today were CN's. Single Notes. Usually "Sit" - type. Rarely sometimes "Tchadank".

Dendroica, I.

July 12, 1959
Ceno Campana

Have caught a few more glimpses of this species today; but nothing very much. Again associated with FA's - but only, I think, for a relatively short time. At least, I usually find a whole group of birds of several species feeding in the same area, with a pair of Black and Yellows among them; and then find that the Black and Yellows have disappeared, while all or most of the other members of the group have not moved very much

Chrysotis, July 12, 1957 (2)

I heard the birds utter quite a lot of CN today. Usually rough "Jut Quite loud a hard barking. Occasionally double "Jut jut" & don't hear anything like a "Schaub".

I think that I may also have heard a more "song like" pattern. Three notes comme ça. — — — Each note like a "Jut", or, possibly a more Cat Cries ribulant "Jule". I never actually saw a Black and Yellow utter this, but I only heard the call when Black and Yellows were present in the neighborhood

There was something about the quality of this performance which was more than a little reminiscent of the "songs" of such Tiangor tanagers as the Summer and the Flame-colored.

Nilo Hospitages, I. July 20, 1959
Lake Bello

xxxxxx = cassinii

We saw several groups of birds of this species today, in the immediate environs of the town. In small groups or family parties (I don't think we ever saw a group which included more than 4 birds). One group was in very thick underbrush along the banks of a stream in the forest (near an edge); and another group moved through moderately high second growth scrub outside of the forest into the forest edge. The group along the stream was associated with a mixed flock of formicariids, wrens, etc.; and the group in the scrub was not far from Yellow-rumped Flycatchers (and a little farther from other tanager species) but I don't think that either group could be said to be part of a mixed flock study.

The birds in general were very active and restless and rather shy. Most of their movements, including WT's and TT's (with tail spread) reminded me of Rhamphocelus.

They uttered a lot of sounds, all apparently variations (i.e. different levels of a single pattern. Varied from a single note to long series of apparently identical notes. The notes of a series were always uttered so rapidly as to form a real R. generally hard & metallic sounding (although much less "gong"-like than the notes of the Blue-black Grosbeak, for instance); but rather than a weak resounding. I think that the longest R's included at least 10-12 notes, possibly more. Obviously hostile. Reaction to my presence. Probably contains a relatively strong escape component, as the birds always moved off as soon as I appeared.

Nitrospinigus, I

April 19, 1960
Porto Bello

Watching quite a lot of these birds here. Along the first part of the Las Cruces trail flying about in thick undergrowth, almost all of it second-growth, at the edge of apparently mature rain-forest. All the birds we saw today were pairs. Almost always by themselves. They certainly did not associate with any of the Blue-Green Tanager-Honeycreeper flocks. There were quite a lot of Yellow-rumps in exactly the same areas as the Nitrospinigi, but the two species did not seem to associate with one another any more that was absolutely necessary. Once we saw a pair of Dusky-tailed Ant-tanagers in the same bushes as the Nitrospinigi. It is possible that the Nitrospinigi joined the Ant-tanagers once (see David's notes), but they didn't stay together for more than a few seconds.

I can add a little to my descriptions of some behavior patterns last year.

The most common, single, CN's (the bird I heard last year) might be transcribed by something like "chak" It is these "chak" CN's which are accelerated to form R's. This afternoon, I heard perched birds utter both single "Chak" CN's and R's; but I never heard an R uttered by a flying bird, although flying birds utter single "chak" CN's quite frequently. Neither the "chak"s nor the "R"s are accompanied by obviously ritualized postures or movements (except WF's & TF's — see below) Certainly none of the perched birds I watched utter "Chak" CN's and R's today showed any trace of a CR.

I presume that the R's are produced by higher motivation, on the average, than the "Chak" CN's; but I am not sure, now, that escape is

really strongly predominant in the R. This afternoon, for instance, the pair that uttered most R's was the pair that seemed to be least disturbed by our presence (i.e. which continued feeding in plain sight for several seconds).

One bird (of another pair) which appeared to be most excited by our appearance, flew back & forth in the nearby trees and bushes for several seconds, uttering a great many single "chak" CN's intermingled with three "chak"s were a few single "Whit" notes. (These "Whit"s were never repeated one right after the other. The bird would utter a series of "chak"s, then a single "Whit", then another series of "chak"s, then another single "Whit", etc. etc. etc.) These "Whit" notes sound very similar to the "Whit" notes of Rhamphocelus, but I am sure that there were no Yellow Rumps or Sangre-de-Toros around in the immediate neighborhood at the time. I am almost certain that this Metrospingus uttered its "Whit"s only when it was actually flying. The occurrence of both "chak" CN's & "Whit" CN's in the repertoire of Metrospingus would certainly appear to be a highly significant resemblance to Rhamphocelus.

(Before I forget, I should mention that the length of the R's of Metraspingus seems to be extremely variable. Some R's are very short, while others appear to be moderately long. The R pattern as a whole does not appear to be very highly stereotyped in form.)

I did not hear any sort of "greeting" call, or observe any "greeting" postures or movements, when mated birds joined one another.

The WF's of this species are very frequent & conspicuous. The TF's are much less conspicuous. Probably every WF is accompanied by a TF, and all or most TF's are accompanied by Jnn; but the TF movement itself is not very extreme. Eventually lateral, with little or nothing in the way of a lateral component. (The tail of this species is not very long, not as long as those of Tachyphonus spp. or Ptilliophonus.)

Neotropicuges, I

March 14, 1967
Rio Piedras

Observing approx. a mile up river, in same area I have watched, and am watching, Black-capped Saltators:

7:40 a.m. See 3 birds feeding in canopia along river bank. Very active and very noisy. Flitting from perch to perch. Lots of WF's, very conspicuous. Also TF's. Probably less common than WF's. All or most essentially D-V, sometimes with strong lateral component, sometimes without any lateral component. All or most of the TF's with lateral component synchronized with WF's. At least some TF's without lateral component occur by themselves alone, without WF's. Tail certainly fanned during TF's with lateral component, possibly or probably fanned with all TF's.

The notes uttered are all short, hard, and metallic. Some essentially simple. These are undoubtedly the same thing I called "chak"s before, but I think they might be better transcribed as "Jrit". Obviously SHN's. The birds also utter a lot of notes which are very similar to typical SHN's, but include a rattle undertone or component. Comme ça: "Jrrrrit" I shall call these "RSHN"s. Both types of notes uttered ~~singly~~ either singly or in series. In same series, apparently jumbled at random. Not accompanied by special postures or movements. Possibly provoked by my appearance (across the river).

8:30 a.m. Suddenly come across a whole group of birds (definitely not the birds seen earlier) in heavy forest. I climb up over an Alta vert on a steep slope, to find myself surrounded

by Mutnos! Birds darting back and forth in all directions!! I think there are at least 10 birds here (possibly only 4 or 5, but I doubt it.)

All the birds become very vocal as soon as I appear. Utter ing many examples of two distinctly different types of calls: R's, and "Wk"s.

R's like the ones I have heard previously. Accelerated seri es of SHN's sometimes very long.

Wk's reminiscent of Buff-throated Saltator, Orange-billed Sparrow, and Palm Tanager. Rattles stiff and high. Variable. Both in length and composition. Often including PN-like "Sawsee" note s. (Quite reminiscent of Wttl's of saltators). Sometimes ending in "Sawsee wee."

Both R's and Wk's uttered by both perched and flying birds. R's often uttered just as a bird begins flight R → Wk requences common

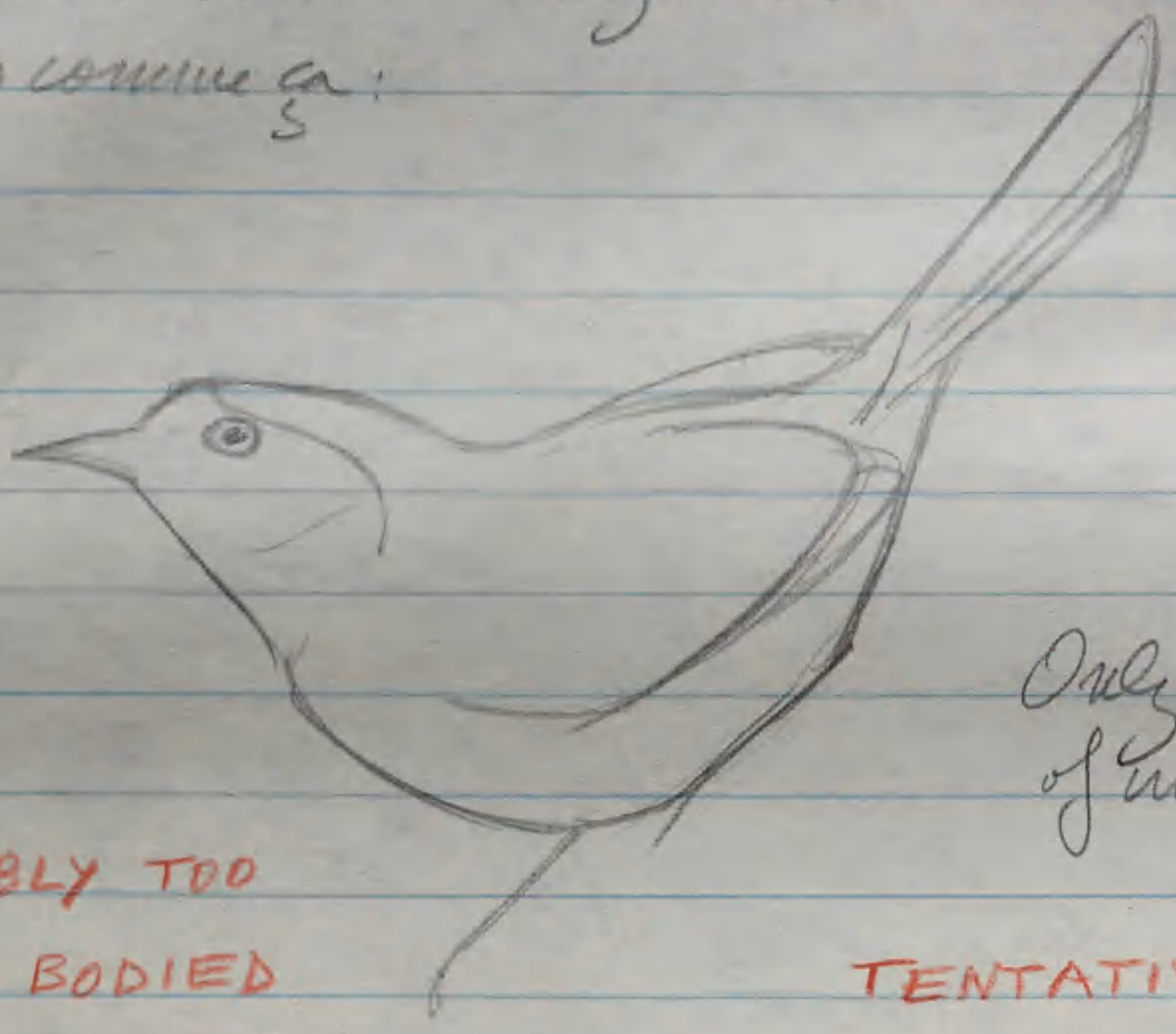
Birds seem to be reacting to both me and each other. They are eventually "mobbing" me. But also seem to get in one another's way very frequently. Some fierce, incredibly fast, and violent chases develop!!!

8:35. One bird perches on twig above me & rotates me. Utters several rattles prolonged Wk's (without R). Bill opens (widely) and closes with each note. Twice, during this performance, the bird assumes an extreme TV Posture. Bill raised fairly rapidly (more slowly than during flaming movements of other species, but less gradually than in TV of BCBT), and then held there for some seconds, upon clearing. I think the tail is raised at the beginning of a Wk phrase. This TV is not accompanied by BV or

Metrospiza, Mar 14, 1962, #1. (6)

any other special ritualized postural component or movement. The wings were kept up on the back even when the tail was highest

The TV Postures may have been more or less common:



No CR

PROBABLY TOO SHORT-BODIED

Tail somewhat fanned.

Only moderate fluffing of under parts

TENTATIVE!

When the bird flies off, without displaying further to me. A particularly violent and prolonged chase, involving at least 2 birds is accompanied by prolonged R. Followed by Wbl toward the end of the chase, or immediately afterwards

A few seconds later, a bird perches and Wbl's at me again. (I don't know if this is the same bird as before or not.) Without TV. No special ritualized postures or movements of any sort

Then aerial chases beginning with R's and continuing with Wbl's.

Wbl's obviously contain a relatively stronger escape component than R's. R's may be quite aggressive. The usual R-Wbl sequence of this species is quite reminiscent of the Buff-throated Saltator.

Some birds are still vocalizing actively now (8:40), as before, but I think that several others have already moved off

Almost all the activity of the birds has occurred from 3 to 20 ft above the ground. Perching from 6 to 20 ft above ground. Undergrowth is very thick here Lots of spiny palms

Some birds still around and quite active, 8:45 a m. 8:55. A bird comes up and Wol's at me. No TV.

Gradually birds seem to be moving off. So I move on myself. Come across birds again almost immediately, a few yards up hill. Again a bird comes and Wol's at me. This time with TV.

9:00 a m. There seem to be many fewer R's now than when I came upon the birds first. R's almost confined to most violent chases. And chases seem to be rarer now than earlier. Wol's still very common

The Wol's themselves can be enumerated almost to a rattle The most rattling type of Wol's are thinner, higher-pitched, and more irregular than the typical R's compound of enumerated SHV's I shall call these rattle-like Wol's "Ac Wol".

Wol-ing still continuing at great rate, 9:10 a m. R's still come occasionally.

Shortest Wol's might be transcribed by something like "I see tsawee tsee". Very Buff-throat-like!

Birds drifted away now, 9:15. Leaving myself 9:17.

When I come back to the same area again, at 9:417 a m., the birds are not visible or audible closely. But I may hear them in the distance.

The large groups of birds here today was quite reminiscent of a lek !!!

This species is incredibly active. The only thing I have ever seen which was even remotely comparable to the activity here

III was the activity of Mimocichla rubies at three counts!!
This species is somewhat reminiscent of Rhodinocichla in shape. Especially the bill.

Nitrospringes, I March 15, 1962
Rio Piedras

Music area where all the birds were yesterday 6:07 a.m. No birds clearly. But I hear something like R in distance. Just waiting to see what shows up.

6:15. Birds coming closer. Lots of WBL's. Can't see them yet. WBL's including mostly relatively long "zeee" notes. In relatively short phrases.

Phrases seem to be quite regular. Starting with moderately soft and moderately short notes. Working up to climax longer and louder notes (5?), sometimes followed by a couple of shorter ones again.

All or most of these WBL phrases uttered by one bird.

These phrases might be less strong & hostile than most of the WBL's during the "mobbing" yesterday

Bird now WBL-ing almost continuous 6:20 a.m. Phrases longer, but still largely composed of relatively long "zeeeee" or "reeeee" notes.

WBL's very loud and vibilant. Penetrating.

No trace of anything like Dawn Calling in neighborhood

Bird gone again 6:21 Can hear WBL's in distance. On two sides of me. But not simultaneously. Also occasional brief R.

Still no birds near me, 6:25. All more or less quiet, 6:27

There are obviously several pairs and/or unmated birds here. But the area does not seem to be a lek.

Hear a few birds in distance again 6:30. Only for a moment. Moving on 6:35 a.m. Trying to circle area where birds are (or were).

Now hear birds back in old area 6:50. Uttering SHN's. These seem to vary from something like "Tsit" to something like "Tchak" Their general quality is quite reminiscent of the forecasker-like noises of marabous (this is true of all the SHN's of the species).

Then go for a long walk up side stream. Can hear Nutcros almost everywhere!! Edges forest. Almost everywhere there is thick undergrowth. Seem to prefer areas where there are trees above the undergrowth. Hulelia Yellow-rumps in this respect.

7:35 a.m. Come across apparently single bird. Sitting low in dense tangle where I can't see it. Uttering WBL after WBL. Each phrase like the ones heard earlier this morning. Relatively short, but composed of relatively long notes. Hostile reaction to me?

7:50. Come across pair feeding in surprisingly exposed position. Along river. Uttering SHN's and RSHN's when I first see them in distance. Then RSHN's and WBL's when I get closer. Accompanied by flicking and escape tit. movs. One RSHN prolonged into real trill. Much higher pitched and more rapid than R's. Shorter than long R's.

Are RSHN's alarm? Lower intensity than WBL's?

Some of the WBL's uttered were nothing but "Zeeeee zeeeee zeeeeeee" Very emphatic.

8:30 a.m. Come across at least 3 Mitros feeding in exposed positions. Same place as before. Probably same birds. Again react to my appearance by uttering lots of RSHN's. I think these RSHN's may be what I called R when I watched the Porto Bello birds. (Definitely not what I call R now !!!)

Why do some birds utter WBl's alone, apparently as a reaction to me? If the RSHN and WBl are both "alarm", and RSHN is lower intensity than the WBl, one would expect that every bird that uttered WBl's would also utter RSHN's. (I might add that the birds which have uttered RSHN's have been further away from me, on the average, than the birds that have uttered WBl's alone. But I can't interpret the significance of this difference.)

Mitrospingus I. March 17, 1962
Rio Piedras

Back to "Lek" area 6:00 a.m.

Just bird appears, uttering WBl phrases (as on Mar. 15), 6:10 a.m. Cannot stay to watch it (the Yellow-mumps are starting to act up), but I think the WBl rag continues for only a few seconds.

Come back 6:25, to find at least one bird uttering WBl phrases. It reacts to me by R—WBl—retreat (without my actual being able to see it).

There are also Dusky-tailed Ant-tanagers around. They were here on Mar. 14 too. I wonder if they flock with Mitrospingus ?;?;?

Mitrospingus, I  March 18, 1962
Rio Piedras

Arrive "lek" area 8:30 a.m. No birds around. 1 pair discovered at 8:35. Fly in stages past me. Utter SHN's, RSHN's, and WBL's. WBL phrases fast & long. Some of the WBL phrases apparently include "Treeeeeee" notes.

Mitrospingus, I  Ca. August 20, 1962
Rio Piedras

7:25 a.m. Come across a pair of Mitros unexpectedly. Very active. Obviously somewhat disturbed by me. Utter lots of rather low-pitched SHN's. "Took"s or "Tuck"s. Also lots of BuffR's or low-pitched SHN's: "Trrrrruk"s — especially at first. Also a few WBL's. Once apparently as "greeting".

Cyanocompsa, I.

January 7, 1958
Barro Colorado

[redacted] = Blue-black Grosbeak = cyanoides

I have only seen one of these birds since I've been here at the edge of the bush near the aviary. Didn't do anything but look at me, nervously, and do pronounced TF's. Definitely a conspicuously D-V.

Cyanocompsa, I

January 15, 1958
Barro Colorado

Heard a lot of noise in an orange tree near my house, and finally tracked it down to a pair a Blue-black Grosbeaks. Lots of what were apparently CN's, and flutking. I didn't get a very good view of the whole performance, but what I did manage to detect was the following:

The CN's themselves were usually single notes. A few doublets. Apparently the same in the 2 sexes. Not too unlike the CN's of the Saurge de Toro, rather nasal, but louder and much more metallic. Both birds uttered them for a while, and then the ♂ flew away. The ♀ then began to give CN's at shorter intervals, giving quite a lot of them almost in a row, and then flew off herself, presumably to join the ♂.

Many of the CN's were accompanied by TF's, and a few TF's occurred by themselves alone, without notes. Quite extreme largely vertical D-V. A few with a slight lateral component.

Cyanocompsa, Jan. 15, 1958, II.

much less than the lateral component in the TF of such passages on the Savage de Soto — perhaps it would be best to say that there was very little lateral movement compared with the extent of the vertical)

The tail was often more or less fanned during the TF's, but less so than usual in the Savage de Soto.

Some TF's were accompanied by WF's of the usual sort

(I might add, incidentally, that the sound of these CN's is very much like much louder "clank" notes of Sporophila)

Cyanocompsa February 12, 1958

Finally heard the "song", or part of it, of the Blue Black Grosbeak 5, 6, or (most frequently) 7 notes. Obviously the first part of the "song" as described by Chapman. Given from an apparently invitational "ordinary" sitting posture (rather erect) with very little or no erection of the vent feathers

Cyanocompsa, I. February 16, 1958
Barro Colorado

The pair which showed an interest in the orange tree appeared again this afternoon. Apparently both present at first. Did a lot of CN-ing, apparently chatting back and forth. I noticed that these CN's could be either singles or doublets. Each note might best be transcribed "Tilt", very loud. The doublets were

perhaps more common than the single notes most of the time The ♂ apparently flew away after a short while — at least he stopped calling. The ♀, however, continued to give CN's with great frequency. This whole performance suggested that the CN's were used as a means of "calling in" the mate

I have now heard a lot more singing; probably by more than one bird But I still haven't heard anything like the second phase of the "song" described by Chapman

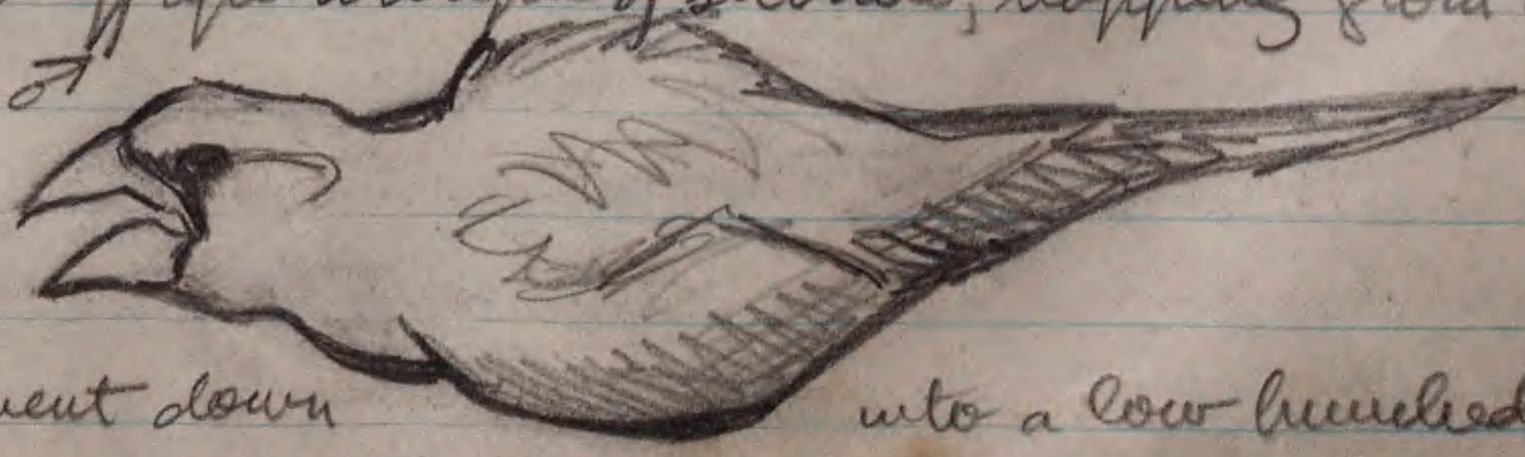
October 30, 1958,

Cyanocompsa I Brown 300

= cyanea = Brazilian Blue Grosbeak

Here are 2 birds of this species here, an adult ♂ and an adult ♀, in a cage with a lot of other finches.

When I first looked at the birds, the ♀ was down on the ground feeding, while the ♂ sat quietly in a bush. Then she flew up and sat beside the ♂. The 2 birds sat quite erect, turning to face one another, and repeatedly touching bills. They looked like some sort of friendly billing; and I think it was inactive The ♀ flew off after a couple of seconds, hopping from twig to twig The ♂ [illegible] rowed here.

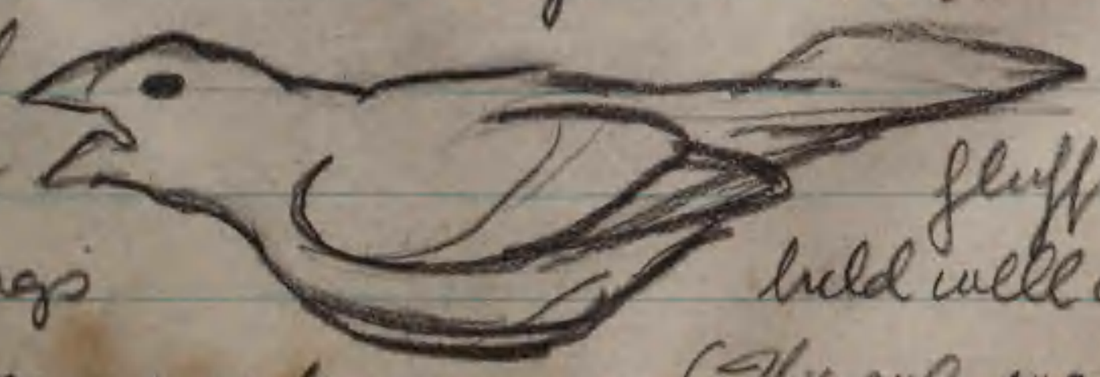


Once he went down into a low hunched posture, with neck stretched forward a little, back feathers ruffled, and did definite G. The ♀ moved off again, and the ♂ relaxed

I have been watching the flickering of the ♂ band with considerable interest. The WF's are about "normal" in form & frequency. Some of the TF's are D-V, like those of the Blue-black at BCI, but at least half, and probably the majority are V-D! and with a considerable lateral component.

Cyanocompsa, I November 1, 1958
Brown Zoo

A lot of disputing between the ♂ and ♀ Brazilian Blues this morning. Actual aerial fights & chases. I don't know what started them off, but I think that it was just that one bird got too close to the other. The actual fights were accompanied by single, distinct but repeated, loud sharp notes. Might be transcribed as "Whit" or "What" sounded quite like the CN's of the Blue-blacks at BCI, but somewhat less metallic. I presume that they are analogous with the HAC Notes of other species (and possibly remotely or indirectly homologous), but sounded quite different. Between and/or after fights the 2 birds stood facing one another in G, often for long periods of time G definitely silent. Given from postures rather like the one drawn above p. 3, with some differences. Slightly variable, but almost always with head somewhat low, neck not stretched forward much, little or no fluffing or ruffling of any feathers, wings held well out of the "pockets", and tail very spread.



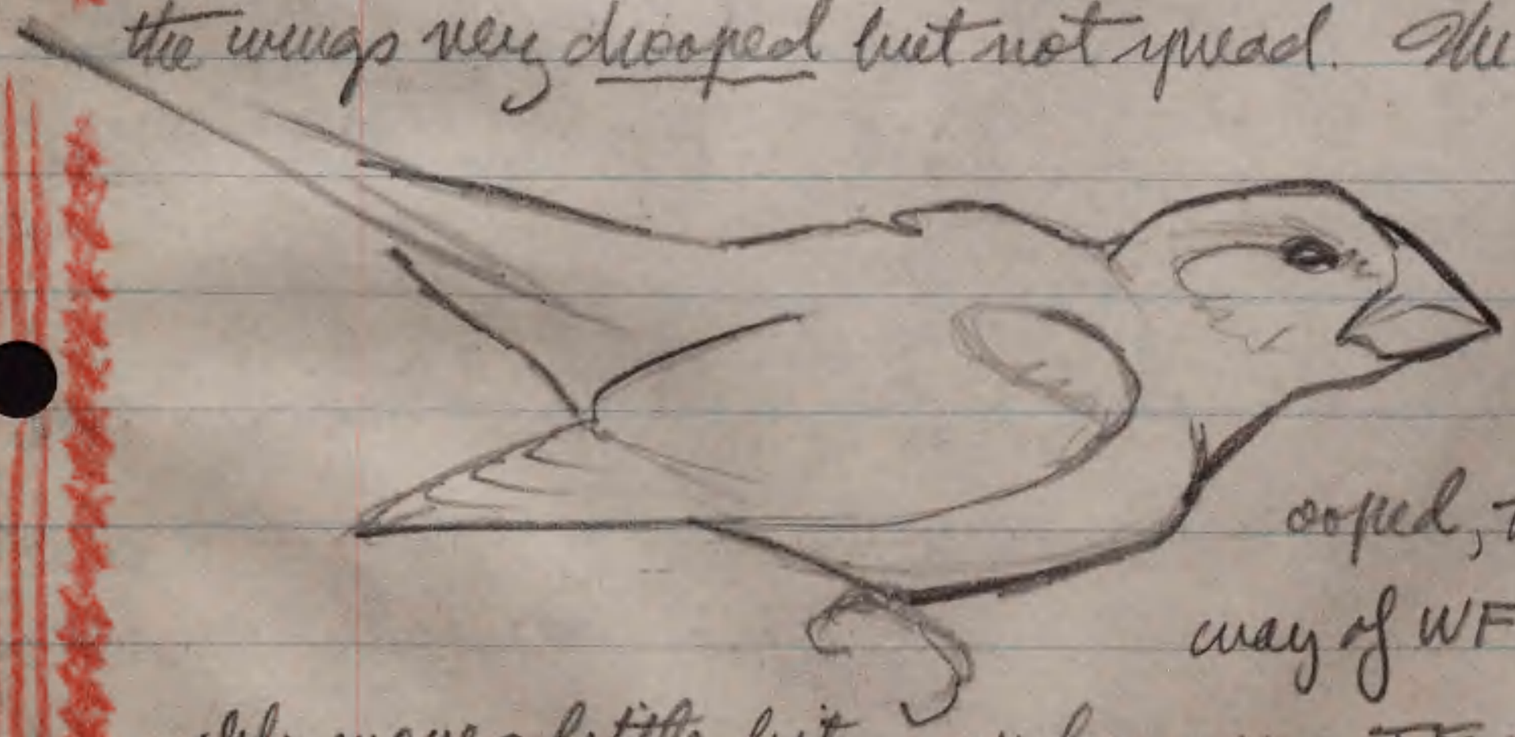
(The only marked departure from this was one G by the ♀, with crest raised quite high and lowered

breast and belly feathers very fluffed. This may have been due to the fact that the ♀ was standing by a pool of water, getting ready to bathe, when the fight broke out, while she was in G.)

Cyanocompsa, I September 2, 1959
Bronx Zoo

Watching the same pair of Brazilian Blue Grosbeaks, in the same cage, as last year. The ♀ at least seems to be in breeding condition. Doing some nest-building, and even incubating on a half-finished nest. The ♂ seems much less active.

I have noticed, however, that whenever the ♂ seems "excited", by my approach or the activities of some other bird(s) in the cage, he tends to do fast and rapid, very extreme TF's, of exactly the same type as the Rhamphocelus Tanagers, up-over-down (& back), with the wings very drooped but not spread. The tail feathers are sometimes (at least) slightly spread during the TF's. While the wings are drooped, there is little or nothing in the way of WF (although the wings probably move a little but whenever a TF occurs). This TF & wing droop may be combined with a variety of apparently unritualized sitting & hopping postures, low, diagonal, high, etc.



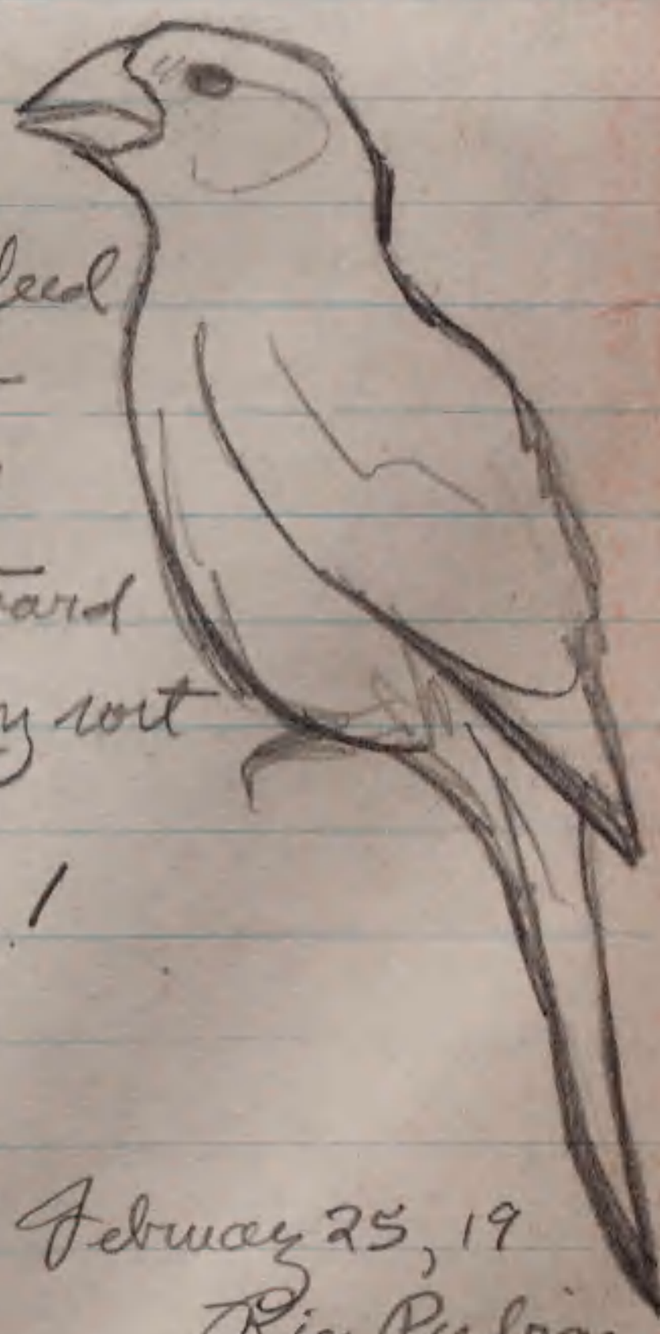
One thing I have just noted, during this wing-drooping. The carpi are apparently always visible when the wings are drooped and the wings may be stretched out horizontally a little (without being spread to any appreciable extent) at the same time as they are lowered.

Aha! All this tail cocking & wing-drooping are apparently only low-intensity indications of a more extreme display! Probably a bout like display. When a ♀ Cardinal flew past the ♂ Groubeak, he flew after her, uttering a fairly long series of hoarse notes as he did so. Might possibly be transcribed as "Tah tah tah-wheet-a-whah." Obviously a form of HAC, or closely related to it. The ♀ Cardinal was going down to feed; and when she landed, the ♂ Groubeak landed about a foot above her, clinging to the wire of the cage, with all his head & body plumage smoothed down very flat, tail cocked diagonally high in the air, tail feathers definitely spread, and wings held out almost horizontally (again without the primaries being greatly spread). Carpi very conspicuous (they are a lighter and brighter blue than the rest of the wing & body plumage), although they were not held out very far from the body. I shall call this whole posture "the spread" (5). This extreme ♂ was quite silent.

The ♀ Cardinal quite ignored the ♂ Groubeak, and he eventually gave up & flew away. Spent the next several minutes flying from perch to perch around the cage. Each time he flew he usually uttered a brief series of more or less HAC-like notes. For instance, "Tah tah

Tak" or "Tak Tak Wheet." And each time he landed, he usually assumed a more or less low-intensity, vidication of the S. Eventually, after several minutes, he relaxed and stopped displaying.

Several times this morning the ♂ has sung, sitting by himself, while the ♀ was incubating. His song is made up of clear, whistled notes - quite loud - but is rather less "obviously organized" than the songs of the Blue-black Grosbeaks at BCI. Might possibly be translated by something like "Whee-whee whee-whee tawhee-uh-uh-whew." The first part is compound of doublets, the last part is a warble. Frequently repeated. Uttered from an obviously unmotivalized, rather erect, slightly stuffed standing or sitting posture.



Later on this morning I saw the ♂ feed the ♀ on the nest. I didn't see him as he first approached the ♀, but the actual feeding itself (and he made at least 5 separate "passes" toward the ♀) was not accompanied by any display of any sort by either bird

S

My god! The ♀ had an egg today!

Cyanocompsa, I. February 25, 1962
Rio Piedras

7:15 a.m. A ♀ Blue-black Grosbeak lands in bush near me. Obviously very nervous about my presence. Utters lots of metallic notes, the type of note I used to call "CK". Obviously SHN's. Sometimes single

frequently in doublets. She also performs many TF's. All essentially D-V, but with a very strong lateral component. The tail is spread during each TF, spread very conspicuously at the beginning of each movement, and then folded again at the end of each movement. This is by far the most highly ritualized and unusually conspicuous type of TF that I have seen in any species of any groups (when I have compared it to the TF's of other species, it is usually or always maintained between TF's as well as during them).

The ♀ also utters another conspicuous call from time to time. Loud, hoarse, screeching "Isause" notes. Single, double, or triple. Interspersed among the SHN's. Usually fairly well separated (by a pause) from the SHN's; but sometimes a single "Isause" occurs immediately after a doublet of SHN's without intervening pause.

As far as I can tell, neither the SHN's nor the "Isause" notes are very rigidly correlated with the TF's.

The ♀ certainly definitely does not have any trace of CR during this performance. Probably does not do any WF's either!

After the ♀ has been behaving like this for some minutes, I hear the ♂ singing about 20 or 30 ft away. Typical song. Then the ♀ begins to answer the ♂. Utters a single song phrase immediately after he utters single song phrase. Repeatedly. Her songs are nearly, but not quite, identical with his. The first phrases of her songs (5 or 6 notes) are definitely softer than the first phrases of his songs, although similar or identical in tone, pitch, and length. The second phrases of her songs are brief flourishes, too short to be called warble. (I don't know what the second phrases of the ♂'s songs are like. He is too far away for me to be able to hear them.) It is possible

Cyano-campsa, Feb. 25, 1967, III (9)

be that the ♀ sometimes emits the second phrase in her songs, but I am not sure about this.

Then the ♂ flies in to join the ♀. Lands right beside her. Some sort of vocal "greeting" between the 2 birds, which I did not catch awfully well. Apparently a brief series of "Issawa" or "Issawee" notes, softer and more HAC-like than the notes the ♀ uttered earlier. I don't know if these notes were uttered by one or both birds.

Then the ♂ hops about nervously, reacting to me in much the same way as the ♀ earlier. Utters 1 or 2 loud, hoarse, screeching "Issawee"s. Always single. Surprisingly enough, he does not utter any SHN's. Does TF's like the ♀. No WF's or CR.

Then the ♂ flies away. The ♀ follows. One or both utter emus SHN's as they go

Habia, I

March 10, 1958
Forest Reserve

xxxxx = gutturalis (or fuscicauda) = Dusky-tailed Ant Tanager (or Red-throated Ant Tanager).

In the course of various explorations around the zone, I have heard a lot of scolding notes uttered from deep thickets. Finally today I was able to prove that they were uttered by Ant-tanagers. Certainly by ♀'s, and almost certainly by ♂'s. Sound as much like the Rep's of the Green Honeycreepers as any other tanager call I know, but deeper, hoarser, & louder (? Hawks)

The TF's of these birds seemed to be extremely variable - they seemed to perform all conceivable kinds, as far as I could see, depending upon the position in which they were pecked at the time. But I think that the usual form was Up (fast) — Down (slower), with a fairly marked lateral component.

Habia, I

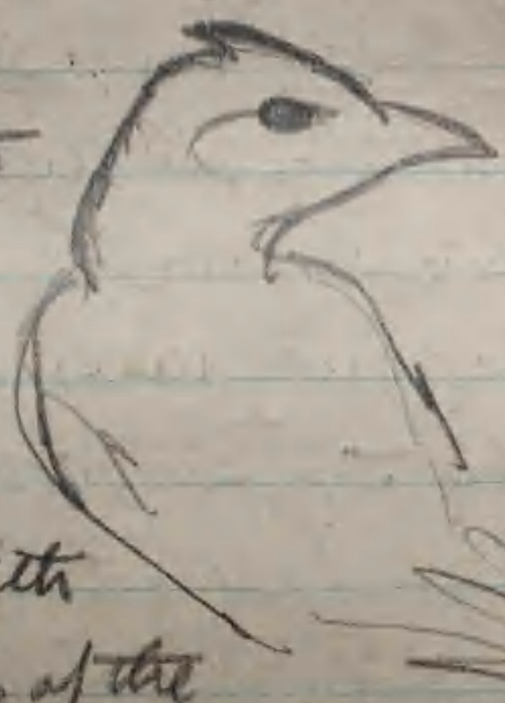
March 17, 1958
(K-6, near Arraijan)

Surprised some Ant-tanagers in scrub. One bird gave the usual scolding notes (Sc), "Chuck"-like Notes (Al ♂N) and all intermediates between the two, as it flew off. These "Chuck"s sounded just like the alarm call notes of other species, and must, I think, have been essentially the same thing.

A few minutes later I surprised another bird, this time definitely a ♂, in similar scrub. He uttered a few Sc Notes,

Habia Mar 17, 1958, II

there sat looking alert, uttered a few more Sc Notes, sat looking alert, etc. etc. His nest was somewhat raised during the periods when he sat silent, and also (at least) during the last few bouts of Sc. Commence:



Many of these bouts just four notes. Kraa — — — — of Sc Notes included Kraa kraa kraa" Kraa kraa notes are probably the Rsp of the shining round as Sc not strictly homologous with green Honeycreeper or the Bss of the Honeycreeper Actually, they probably much like HCN's of Blue Honeycreepers as anything. Just another example of moderately high intensity notes, with an appreciable aggressive component, developing a hoarse harsh quality — perhaps more or less independently of the similar - sounding notes of other species. (It would be interesting to know, however, if the Sc Notes are particularly closely related to the R's of the Summer Tanager ????)

After this period of alternate silent sitting and bouts of Sc Notes, the ♂ flew away suddenly, with a burst of pure "chuck" Notes. His flight was so sudden that it looked like escape and would seem to confirm the interpretation of these "chuck"s as AlCN's.

Habia, I March 28, 1958
K-6

I caught a ♂ Ant-tanager in my net near here yesterday

Halvia, Mar. 26, 1958, I

When handled in the net, this bird uttered "typical tanager" H Scr Notes (almost identical with those of the Saltators). They were also obviously identical or, at least, very similar to the Sc Notes.

The bird later uttered both H Scr-Sc Notes and "chuck" alC Notes. The H Scr-Sc were not accompanied by CR — at least in most cases.

Unfortunately, this bird refused to eat and died today

Halvia, I August 10, 1958
Cerro Campana

See end of today's notes.

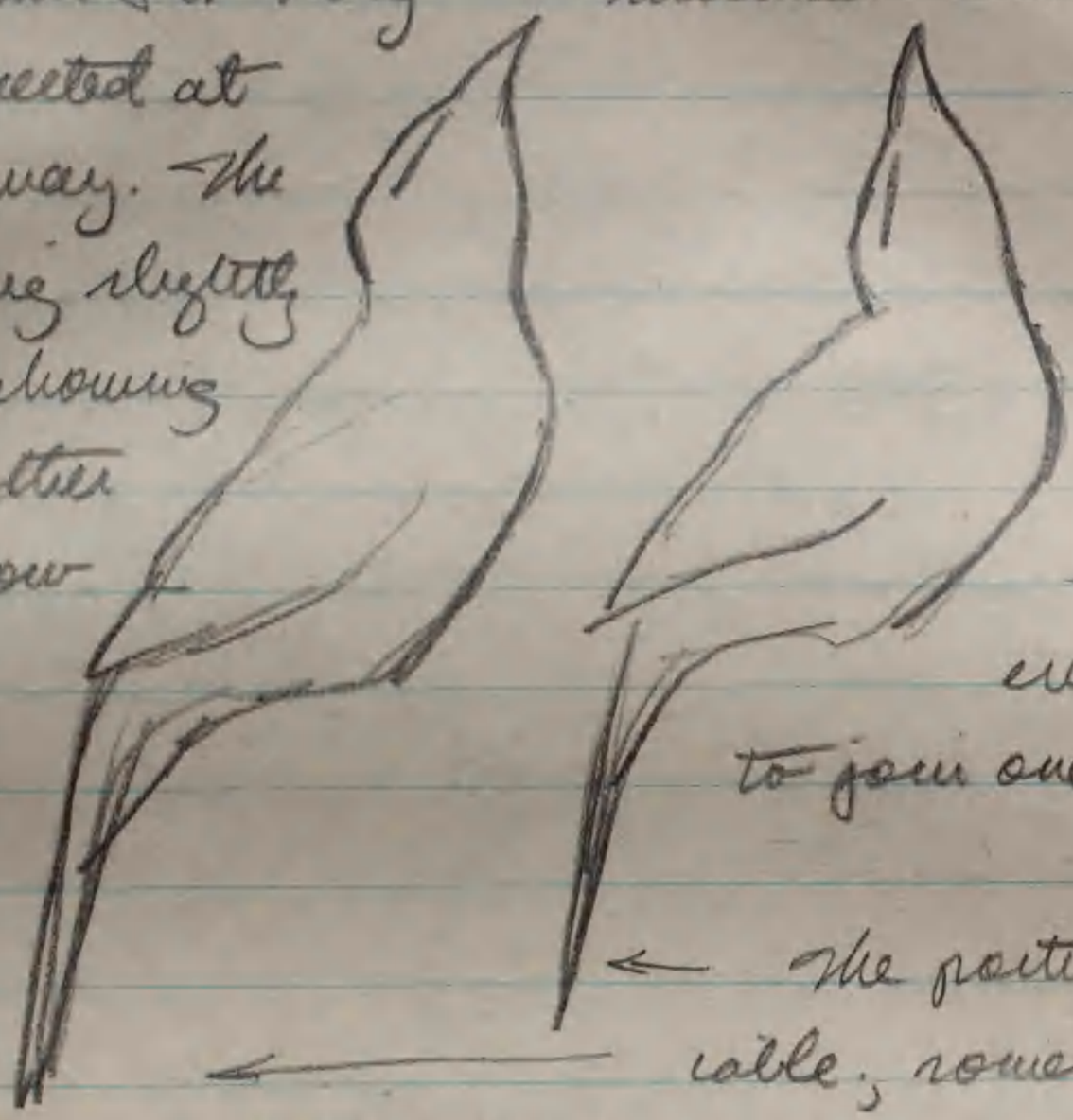
Quite a lot of these birds around here, more or less at the lower limit (? thick) of the montane forest.

I watched one flock, including at least 2 adult ♂'s, and 3 or 4 females or juveniles ?). Rather loosely organized, but definitely moving together. Quite conspicuous. Near tops of middles of moderate trees — not in underbrush. Briefly in same tree as mixed flock of several Lavinia's Tanagers and a pair of Blue Dacnis, but soon moved on.

Whenever one bird flew and landed near another, it uttered a series of harsh chuck-like notes, usually five, "Tuck tuck tuck tuck tuck", — — — — — Very very reminiscent of the "Loud call" chuck notes of the Streaked Saltator and Black-winged Palm Tanager.!! Obviously homologous.

These notes were certainly uttered by the ♀'s, and almost certainly by the adult males as well.

One of the adult ♂'s displays. An exclusive Lt. Long Apparently directed at about 3 ft away. The ♂ kept turning slightly back — thus showing breast. The other unimpressed bird playing ♂ a few yards,



displaying to face the other off the red ♂ seemed quite ever, and the dis- eventually flew away to join one of the other ♀'s

← The posture was quite variable, sometimes very high, sometimes less so. Bill probably usually more nearly vertical in the less high versions

A bird pulling display between 2 ♀'s (or fives) was accompanied by apparently unvocalized ♂ by one bird.

Later on, a pair of these birds, one ♂ and one ♀, began to call from a thicket by the roadside as I walked along. Probably provoked by me. The ♂ just sat, in an unvocalized posture (although I couldn't see if his nest was raised or not) and uttered whole bursts of accelerated "Fuck" Notes. Bill opening & closing a little, or at least vibrating while held partly open, in rhythm with the syllables of the call. Each burst was so long, and contained so many rapid notes (15-20?), that the whole thing was very reminiscent of an R — although probably less rapid, and less mechanical-sounding, than the R's or Jill's of most other species I shall

call it JckR. He hopped from perch to perch, giving JckR's again & again (although probably not actually in flight between perches)

One of the birds (the ♀ ?) uttered quite a lot of very distinctive single very faint hoarse notes.

These latter might possibly have been very faint versions of Sc Notes — although I doubt it — but this brings up the peculiar fact that none of the birds I have watched during the periods I saw H and G and heard JckR gave Sc Notes of the typical kind!!! Why ?? (I did hear a few typical Sc Notes earlier, before I started to take notes, coming from birds I couldn't see in a thicket.)

On second thought, it seems likely that the birds I actually observed today were Red-crowned Ant-Tanagers = rubrica =

Habia, I

January 29, 1959
Bird Colorado

Watching 3 or 4 Dusky-tailed Ant-tanagers associating with a mixed flock of ant-birds. Coming to scold me in the usual way. Again can confirm that the cut is hardly raised at all during Sc. Just barely visible, comme ça:

This Sc alternated with Alc Notes as usual.

One new thing I noticed is toward or away from me, they accelerated series of sharp notes, probably a series of Alc-type notes accelerated almost enough to form a buzz R.

When the birds flew, etts almost always give an

Halia, I

July 28, 1961
Lima

Local race of rubica = rubra

Copulation seen by D. Snow Preliminary; ♀ crouched and quivered her tail. ♂ flew on without preliminaries Copulation probably successful.

Second copulation (another pair) probably similar

Halia, I

May 6, 1962
Galeta Station

I have seen Dusky-tailed Ant-tanagers on many areas during the last 2 years. I have noted various calls uttered by them, without actually trying to study them in detail. As a result of these observations, and re-reading my earlier notes, the following points seem fairly obvious

The "Sc" of this species is HAC. Really quite typical. Must contain an appreciable attack component. The usual response of birds is when they first see me, before retreating

The "Chuck" notes are SHN's. Usually given by birds as they fly away from me. (I am not sure that I have ever actually heard a bird of this species give SHN's except in flight.)

This morning I worked in the heavy, low, wet forest on the navy station here. On the mainland, not on Galeta Island itself. It rained almost steadily throughout the period I remained. Some times very heavily.

Habia, May 8, 1967, II (7)

At 5:45 I began to hear musical phrases coming from thick shrubbery. Eventually identical phrases uttered by at least 2 birds, usually at least a 100 yds apart.

Each phrase largely composed of triplets, usually (not always) with an incomplete triplet at the end. Usually 3 2/3 triplets.

Commence:

"Huh-hoo-heee huh-hoo-heee huh-hoo-heee huh-hoo"

— — — — — — — —

These phrases were loud and musical. Slightly reminiscent of wrens. Even more reminiscent of some ictarids (at first I thought I must be hearing some unknown ictarid). There was usually or always a distinct pause after every phrase.

There were some variations in some phrases. Some phrases included 1 or 2 (possibly more?) extra triplets. Some phrases ended with a complete triplet.

I was never able to see the bird(s) uttering these phrases. They were always well hidden in the vegetation. Both of the birds uttering these phrases seemed to be single, and stationary while uttering the phrases. They both moved about a little, going from station to station, uttering phrases at each station (but I never saw them in flight). The phrases were inhibited by my presence. Whenever I approached closely, the performing bird(s) shut up. This would suggest that the phrases were not hostile.

After approximately 15 minutes, I began to hear typical Dusky tail HAC & SHN's from the bushes when I approached the sites from

which the triplet phrases were issuing At the same time that the triplet phrases themselves tended to stop.

The first great burst of triplet phrases was over by 6:05.

At 7:00 a.m., I came across a small group of Dusky tails in another area. At least 1 ♂ and 1 ♀ or juvenile. They uttered the usual HAC and SHN's, plus, apparently, a few triplet phrases, when I first approached I did not actually see either of these Dusky-tails uttering a triplet phrase, but it was quite obvious that the phrases must have been uttered by one or both of the Dusky-tails, as there were no other birds around When I continued watching the birds, they continued uttering HAC & SHN's, but stopped the triplet phrases. It is possible that the bird which uttered the Triplet phrases when I first approached was not yet aware of my presence at that time.

7:40 a.m. I came across still another group of Dusky-Tails in a third area. Including at least 3 birds. Uttered vocalizations just like the group observed at 7:00. Again, I did not see a bird actually uttering triplet phrases, but the phrases must have been uttered by one or more of the Dusky-tails.

These triplet phrases must be the "song" of this species Probably produced by frustration of sex drive (s). The individual triplets are reminiscent of the "Cho-uh-hoh"s of Rose-breasted Hermit-tanagers. The arrangement of triplets in distinct phrases, and the continued utterance of phrases well after dawn, is reminiscent of the "RV Song" of some spp. of Piranga.

It is possible that Habia spp. may form a nice connecting link between Rhodinocichla, Piranga, Spiza, and Pheucticus

elus. (I may have to revise my dendrograms a bit!)
8:00 a.m. Watching a single ♂ uttering lots of HAC notes
in verses as usual. Usually 3, 4, or 5 notes. Sometimes more.
Perching on branches, watching me, in pre-flight posture. No CR or
WFFS. Lots of TF's, probably slightly slower than usual. Tail
fanned to a very extreme degree, both during and between TF's.
Absolutely no WF's. Most of the TF's were largely or completely
lateral, with only a trace of D-V, if that. A few were vertical,
definitely D-V. It is possible that the fan was more extreme with
the lateral TF's than with the vertical ones.

After some minutes, the ♂ flew away, uttering a verses
of SHN's as he did so. Quite rapid, almost an R. I have heard
other birds utter similar rapid verses in similar circumstances.
I am not sure that such verses are really homologous with the
R's of many other species.

This ♂ fell silent after he disappeared from my view.
Then, a minute or so later, I heard what was almost certainly the
same bird uttering a single triplet phrase

Some of the birds I observed earlier had also performed
TF's while I watched. All essentially D-V and/or lateral.

Oryzoborus, I

March 30, 1958
Barro Colorado

[redacted] = Lesser Rice Grosbeak = funereus.

I caught an adult ♂ of this species in my nets at K-6 a couple of days ago; and I have let it loose in the aviary — where it has done practically nothing at all.

It seems to have TF's more or less like Sporophila and Volatinia; but they are rarer than in the other species, and perhaps less extreme.

Surprisingly enough, I haven't seen this Grosbeak give any WF's yet!

No! I take it back - partly. This bird does do some very slight WF-ing, almost always in conjunction with TF's. The form of this movement is also more or less normal; but it is certainly much slighter than that of most of the other finches I am studying.

This is certainly one of the silent species — like Sporophila I haven't heard this bird give a sound yet

Oryzoborus, I

July 20, 1958
Barro Colorado

This single capture ♂ just sat around doing practically nothing, until I let 3 new ♂'s and a ♀ in this afternoon.

The old male is unbanded; the 3 new ♂'s are banded green left, lavender right; red right; and the ♀ is banded

Oryzoborus, July 29, 1958, I

When I put the new birds in, the old ♂ spent quite a bit of time chasing the new ♂'s. Not very exciting. Mainly ordinary supplanting attacks.

I did see, however, that the old ♂, and not the new ♂'s, did quite a lot of CR. Apparently quite extreme, like that of the Yellow-bellies or the extreme CR of ♂ Vanables, (a little difficult to tell exactly as the old ♂ is partly bald). The old ♂ would sit with CR for some time, then fly to attack, smoothing down the head feathers just before flying.

There was one vigorous fight between the old ♂ and one of the new ♂'s, on the ground. Accompanied by loud, repeated, & rather irregular HAC Notes. Quite like those of the Yellow-bellies, but perhaps a little clearer and more trumpet-like

Once, when the old ♂ was hanging on the side of the aviary facing one of the new ♂'s and with his crown feathers raised, he quivered one wing, (the free one away from the aviary wall). But, noo. of flying ???

One of the new ♂'s apparently gave 2 CHN's, in rapid succession, once when he was apparently nervous about my approach.

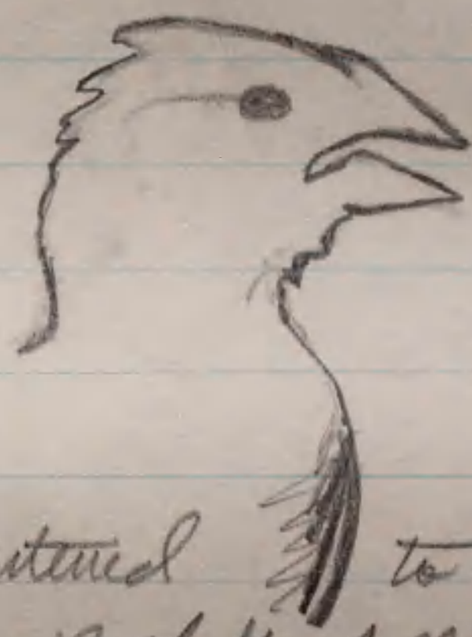
Oryzoborus, I

July 7, 1959
Tripoles

I have heard several ♂ Flush-called Lead-Spiders singing recently, both here and on the Atlantic side near the Rio Piedras. To all intents identical with the typical WS of the Sporophila sp. I have

streaked, including "chaffy trills" and occasional harsh notes; but all uttered in a strong, louder voice, as would be expected in the case of a larger bird. The main part of the WS of the Black-billed Seed-finch also seems to be rather more melodious than the equivalent pattern of Sporophila. Probably just because its voice is louder.

The 1st I watched uttering WS's today sat fairly upright, with a slight trace of CR toward the rear.



Oryzoborus, I. July 8, 1959 Tingolés

Listening to the same 1 I listened to yesterday. Giving WS's as before. This time I noted he interspersed chaffy trill's, rattle R's, and occasional, small, double, bell-like notes in the middle or at the end of the usual melodic phrases.

Oryzoborus, I.

December 14, 1958
Iquitos, Peru

~~[illegible]~~ = angolensis

There is a small goldfinch - or seed eater - sized finch here which I can't identify. All black, except for chestnut lower breast & belly, and white or light gray wing-linings.

a lot Sporophila

A single bird, presumably a ♂, has been singing in a way that is most reminiscent of both and Spinus

ordinary sitting posture

This song is quite loud. Includes a lot of pleasant, whistled, doublets — —, and also some pleasant warbling passages. And each song phrase includes 1, 2, or 3 real loud R notes (too much like R to be called "chaffy trills")

I shall call this "the Brown & black finch" for the time being.

Oryzoborus, I

December 17, 1958
Iquitos.

A few more of these birds around here this morning, and got a better look at them.

The ♂ sang quite a lot. The WS just about as described a couple of days ago. Showing some tendency to end with the R. The ♂ always

Onychorhynchus, Dec. 17, 1958, II.

began the WS sitting fairly erect, in more or less the posture drawn on the preceding page, with head pretty much resting on shoulders. Then as soon as the WS was well begun, he would stretch his neck quite far upward, raise his tail a little, and remain with the neck stretched up and the CR for the rest of the performance.

Singing Posture

Perhaps some slight fluffing of the chestnut belly feathers

tail thus shape

I noticed today that the bill of this species is quite thick, almost as much so as the Onychorhynchus with which I am familiar in Panama.

This ♂ was followed, more or less closely, by a ♀ or juvenile. A dull, relatively grayish, brown more or less all over, with blackish bill. Uttered quite a lot of CV's as it moved around. Usually or always doublets or triplets: "Dah-dit" or "Dah dah dah" Quite loud, and slightly metallic or nasal. Just slightly reminiscent of the Cyanocompsa on BCI.

This ♂ usually goes his rounds from much the same places as a Sporophila. Fairly well exposed, on more or less bare twigs, near the top of small trees or large bushes. Not as high up

as the ♂ Red & Gray food-eaters

I have now seen more of these birds in another spot, about ½ a mile down the road from where I made my earlier observations. I think that the bird I described as "gray" above was probably a juvenile. I have seen more birds like it. They are not really gray — just pale, but quite reddish in tone. It is these birds which utter all the CN's. And it is obvious now that the doublet type of CN, "Dah-dit", — —, is the usual type. What I take to be adult ♀'s are much darker brown (although still quite reddish), more like my captive ♀ Oxyzoberus in Panama. So far, I have not heard either adult ♂'s or adult ♀'s utter anything in the way of a call note.

This species doesn't form mixed flocks either, although it may happen to move into trees or bushes where other species may also happen to be. All such "associations" seem to be purely "coincidental"

Oxyzoberus, I December 18, 1958
Iquitos.

Watching more of the Black & Browns across the Nanay River from Iquitos. Several apparently single ♂'s, giving WS's. Going the rounds of the high perches or stations in their territories.

Not all WS's contain R. There may be some quite long WS phrases without any trace of R. Does this suggest that the R is either more or less aggressive than the rest of the WS ??>

A very interesting incident just occurred. So fast that I coul-

don't follow it all. A small bird, presumably a Brown & Black, flew by and started to land in a tree on the territory of a Brown & Black ♂ I had been watching for some time. The owner ♂ was in a tree some distance away, but he immediately flew to the intruder, uttering rapid hoarse slurred notes, presumably a form of HAC, as he did so. The intruder flew away immediately, and the owner ♂ landed immediately and uttered an abbreviated & hurried WS phrase, without R! Shows that the WS of this species is hortole, like the WS's of (other) Sporophila.

The adults of this species seem to be very sparing of their CN's. I don't think I have heard one yet.

Now I have heard the ♂ utter what I think are CN's. A few soft, pleasant, rather melodious, single notes, at intervals of several seconds, after a burst of WS. These might be transcribed as "Tut". But this hardly conveys the quality. There is no doubt but that this species gives far fewer CN's than any (other) species of Sporophila with which I am familiar. This comparative rarity of CN's is probably correlated with the fact that the species is not gregarious at all

August 15, 1958
Ceno-Campana

[illegible] =

There are quite a number of these birds around here from about halfway up the mountain to the top. Apparently single or in pairs.

One solitary bird (♂?) gave an interesting vocal performance. Setting on a twig a little ways off the ground. Posture apparently unritualized. Giving "Tuk tuck tuu-tooo" time & again. Last 2 notes particularly loud & ringing. Occasionally the preliminary notes omitted, but this was relatively rare. The most interesting aspect of this performance was its resemblance, in general sound effect, to the Hyps of Blue-black Grassquits.

The bird did a lot of preening in association with this. Down on breast, or over shoulders to scapular or back feathers. Usually one preen between each vocal phrase. Quite regular but otherwise didn't seem to be ritualized.

I think I shall call this vocal phrase "π".

November 1, 1958
Brous 300

[redacted] = analis = Yellow-throated Tanager

There is a single bird of this species here, in a small cage with a single Metallic green Calliste and a manakin. I have been watching it quite a bit, but it hasn't done very much.

It looks very much like a large, rather large headed, Tanagara, and it also moves about like one. Very active. Lots of WF's and TF's quite like those of the callistes, except that the TF's seem to be almost completely lateral, with little or no vertical components (and if there is any trace of verticality, it is quite as likely to be D-V as V-D). Lots of very extreme stretch postures before flying up.

I have yet to hear it definitely utter a single CN of any sort. I think it may be uttering quite a lot of notes from time to time, but if so, they must be very soft. (I can hear the Metallic Green Calliste in the same cage utter its CN's very clearly). The Yellow-throat does open & close its bill quite a lot, but most of these movements are probably OCB.

This bird does a lot of OCB, and other "comfort" movements (including bill-wiping, general shakes, stretching of one or both wings, pecking at feet, etc.) when it seems to be alarmed or disturbed by my presence. It certainly does much more of this behavior in such circumstances than any other species of tanager I have ever watched.

Icadesomus, I.

October 30, 1962
Bogotá
Western Andes

7:30 a.m. Patch low wet forest. 6750 ft. Come across a pair of Yellow-throats. Flitting about very excitedly. Nervous, disturbed by me. Utter lots of "Jet" Notes, both when perched and flying. Have "Jet" as theme particularly heard when plane flies overhead. Also lots of long, plaintive "seeeeeet" Notes. Presumably PN's
Birds apparently alone

Icadesomus

November 3, 1962
Eastern & Western Andes

For notes on ~~nesting~~ re amounts of mixed flocks both today and in September near Bogotá.

Icadesomus

November 6, 1962
Llanos

Yellow-throats — re today's notes on mixed flocks

Couldn't get awfully good view of the birds, but I did establish the following. Males had yellow or orange yellow bills, legs, & feet; head gray with black facial mask; chin, throat, and upper breast gray, sharply marked off from white of lower breast and belly; under tail coverts probably not unicolorous. Back gray or grayish — couldn't tell if streaked or not. Wings gray or blackish. Unfortunately couldn't see tail pattern. Females were generally brownish, with some streaking. Bills of both sexes quite long & thin, like those of the Lark-like Sparrows near Quito.

Several ♂'s had individual stations (one ♂ had at least 2). Stations of different ♂'s at least 100 yards apart, usually more. The two stations of the ♂ who was known to have more than one were perhaps 30 ft apart. All stations on edge of terraces, on rocks standing up a little above the general surface or in low bushes (perhaps 1 ft above ground).

The ♂'s sang on their stations. Apparently always when separated from ♀'s. All songs very uniform. Double phrases. "Ta-a-zeeee ta-a-zeeee" Repeated at irregular intervals. Sometimes males answered one another. All or most of the "zeeee" notes had some rattle undertone. Very occasionally, a ♂ would utter a song of 3 identical phrases, or a song of only one phrase.

I didn't pay much attention to the ♀'s, but they seemed to be scattered about, feeding on ground.

At least one male uttered one typical double phrase song in flight, flying from one station to another, but the flight itself did not appear to be ritualized.

When the songs were uttered by perched males, they were not accompanied by any special ritualized postures or movements.

All this is very reminiscent of the Quito birds.

Phrygilus, I — March 7, 1964
Between Calacoto and Palca

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS (for vocalizations of fruticeti.

Phrygilus, I — March 9, 1964
Between Calacoto & Palca
(Oruguyo)

Have had many more opportunities to hear "song" of fruticeti
Always consists of two notes, essentially or completely identical, uttered one right after the other. Very buzzy. Perhaps might be transcribed best as: "Srrrr

(25)

Poecilotriccus, I

February 24, 1964
Mr. Traylor

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

head, but the bird was not close and the rain made it difficult to use my glasses). Singing, exposed, in small tree, approx. 8 ft. above ground. Song phrases quite variable. Apparently 3 main types

(1). "Wheeeet wheeeet"

(2). "Wheeeet wheeeet whaha"

— —

—

(3). "Wheeeeet ta-ta-ta"

———

— - —

(The last 3 notes of this third type might equally well be transcribed as "wha-wha-wha".)

Some additional variation was due to the occasional interjection of an extra note, either an additional high-pitched whistle-like note and/or an additional short low-pitched note.

All quite reminiscent of rufimucha. Also probably identical with A. s. tanyaowskii songs heard during previous trip

While singing, the bird stood in a more or less erect posture, apparently unperturbed in form except that it was always accompanied by pronounced CR like that of rufimucha in similar circumstances.

A few minutes later, the bird stopped singing and started to hop through and along a hedge. This movement was accompanied by lots of high, thin "seeet" notes (thinner than song whistle notes) and short "Tuk" or "Tit" notes. The former may have been PN's, the latter CN's or ACN's (or SHN's ?).

Attapulgus, I

February 5, 1964
Below Palm

Working this morning up in Pest area. SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS.

Heard quite a lot of songs by A. schistacea shortly after dawn. All the same as those heard yesterday.

Got a good view of 3 birds moving around together. Definite A. s. tanganoumbia

These birds uttered a lot of "CN"s, "dCN"s, or SHN's which were new to me. All such notes should be thus called as "Jit".

COMMENT: The "CN"s of the birds here are very reminiscent of the dominant and highest-pitched infantile-calls notes of Chiriqui Canada Jays. A nice connecting link between the Central and South American species of the genus.

*Rhodothraupis*, I January 29, 1963

Working on Cerro Azul today. Came across three different bands of *C. carmioli* (Alvie Davidgers = xxxxx)
All on top mountain.
Band I seen 11:50 a.m. and 2:15 p.m. Band II seen 1:00 p.m. Band III seen 2:30 p.m. Different bands at least several hundred yards apart. Band I appeared to have moved approximately 200 ft. between observations (but probably moved considerably more, as it was reversing its path when seen the second time).

Band I included at least twenty birds !!! Bands II and III included over ten birds each (probably as many as Band I).

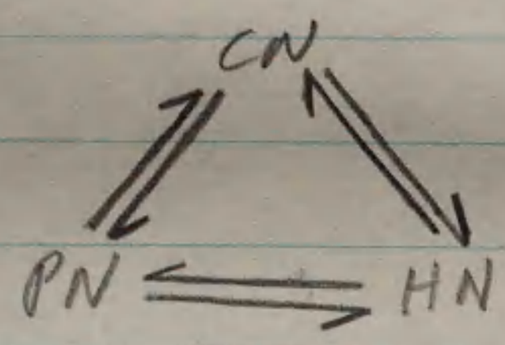
All bands seen moving along forest edge, usually along road, and a few dozen feet within light montane forest. Usually quite low in shrubbery (2 to 20 ft. above ground). Some birds of Band I also trapped on ground occasionally. Some birds of same band also seen at least 30 ft. up in trees.

Bands always moving rapidly. Well coordinated. Birds usually or always close to one another. Sometimes within a foot of one another.

All birds noisy. Uttering great variety of notes. Probably 3 main types: "Tseeeet" notes. Sometimes plaintive, thin, & clear. Sometimes single. Sometimes in series 2 or 3. Presumably PN's. Sometimes slightly hoarse. Series of notes more often hoarse than single notes. "Zee zee zee" or "Zhee zhee zhee". Such hoarse notes probably transitional to CN's or HN's (see below). Typical CN's were "Chuk" notes. Probably homologous with R's of such

species as Ant-tanagers but usually softer (although degree of softness quite variable). Apparently always uttered in series. Usually long series. Indeterminate in length. Series usually accelerating in flight. HN's possibly the most variable of all — at least in tone. Sometimes very nasal & harsh, sometimes less so (these latter may be partly intermediate between typical HN's & "Slaty" type notes). Apparently always in series. Short series 2-4 notes.

General relationships between vocal patterns might be summarized communa:




Bands II and III, and Band I when seen the first time, more apparently accompanied by birds of other species. Apparently Formicariidae - Dendrocolaptidae. Band I was certainly not accompanied by other species when seen the second time.

What I would like to know is why these birds are unclear in mixed flocks and Mitrospingus is not. (See also Slud's paper.) Various possibilities occur to me:

(1). This species shows a greater degree of intra-specific gregariousness than Mitrospingus.

(2). This species moves through a greater vertical range of vegetation. ?????? (If so, this species would encounter more birds of other species. Also, it would be less disadvantageous for birds of other species to become associated with this species.)

(3). This species has typical dull neutral plumage; while the physical appearance of Mitrospingus is legally more distinctive.

Chlorothraupes, Jan. 29, 1963, III,

(4). Chlorothraupes may have the equivalent of dull neutral plumage in its vocal repertoire. It is very vocal, but its vocal patterns are not very distinctive. Typical thraupine patterns repeated ad infinitum.

Chlorothraupes, I March 11, 1963
Cerro Azul

Arrive one of the areas where these birds were seen before 6:10 a.m. Still not quite light

No trace of a Chlorothraupes by 8:35!!!

Then go look at another place where flocks was in January

Nothing there either.

Gray & Yellow

April 2, 1963
Near Jarma.

3:30 p.m. Below Jarma 9000 ft. See a single Gray & Yello w finch (XXXI) ~~XXXX~~ =

Lands in low bush, in open area. Perches about 3 ft above ground. Apparently single. In unintended, very ordinary perching pos ture. Utters several bursts of loud clear song. Always "Keeyoo kew keeyoo kew keeyoo kew..." Bursts of indeterminate leng th, but usually quite brief. Then bird flies off without doing anything more.

I think this song is what I thought might be Laf song yester day.

I am sure that I have been confusing this species with dull plum aged Thraupis bonariensis.

5:30 p.m. Near Palca 8540 ft. Hear similar bursts of song, without seeing singer. Apparently coming from Eucalypt.

This song is really quite remarkable, as it seems to be absolutely typical DC in form! Very primitive ???

April 9, 1963
Nr. Jarma

Walking along river below Palca this morning, Ca 8200 ft.

Raining

7:15. Near bottom Ravine A. See 2 Gray & Yellows. Sit together One just sits on perch 4 ft above ground. Utters repeated song phrases. All

"Chewit chew chewit chew-chewit chew....." In ordinary perching posture. Long plumes never very long. Probably semi-determinate. Not continuous like DC other-genus Notes uttered moderately rapidly.

Flies in area of leave but low scrub.

Sporophila ?



April 9, 1963
Nr Tarma Peru

Working down near Yanamayo. 8600 to 8800 ft, approximately. Region of crop fields and lots of hedge-like scrub. Few trees.

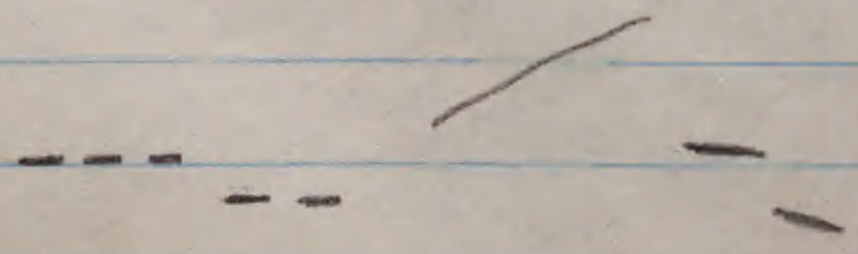
There are lots and lots of diminutive "seed eaters" around here. No XXXII on list. Males are like light phase Variable Seedeaters, with white bills like Variable Seedeaters. ♀'s are dull brown with light bills. Birds certainly look like typical Sporophilas.

All or most of the birds around here now are in flocks. Up to 20 birds in a flock.

I first noticed their display behavior this afternoon.

Ca. 4:15, an apparently male ♂, perched on top of edge, right above, about 15 ft above the ground, began to sing. A huge variety of phrases. Including "Tsit" notes, nasal "Tsaah" notes, high pitched "Wheeeeet" or "Wheeeat" notes, and moderate-pitched Rattles. There seemed to be two main types of "complete" phrases:
(1) "Tsit"s plus R's. For example "Tsit tsit tsit tsit tsrrrrrrrr" and "Tsit srrrrrrr tsit." (2) A few "Tsit"s, followed by a few "Tsaah"s (all more or less at the same pitch), followed by a "Wheeeeet", followed by 2 descending "Tsaah" notes. Common:

"Tsit tsit tsit tsaah tsaah wheeeeet tsaah tsaah



I shall call the first type of phrase "RS", and the second type

"FS".

In addition to these phrases, the bird uttered many others which seemed to be abbreviations, or slight variants, or (possibly) combinations of the two.

All the song phrases were comparatively slow. Less twittering in effect than the songs of the (other) Sporophila and Oryzoborus spp. with which I am familiar. General effect quite Goldfinch like. Even all the nasal "Tsank" notes. All or almost all phrases began with one or more "Tsit" notes. Series of "Tsit" notes always the most rapid parts of the phrases in which they occurred.

It is possible that these songs are really strictly homologous with the songs of other medcaters I know — only slowed down

The bird sat in a perfectly ordinary inconspicuous singing posture throughout all the phrases. Then flew away without doing anything more.

4:45 pm Some distance further on, see a large flock of these birds feeding in a wheat field. Perched on stalks, feeding on seed. They were uttering lots of "Tsit tsit tsank tsank ....." phrases. Also lots of complete FS's.

There was at least one C. "homochroa-minor" feeding with these birds — feeding in the same way. But no Andean Sparrows or Goldfinches. (Both the latter species were in the neighborhood at the time — but they were in orange fields.)

5:30 pm. Heard a ♂ of this species utter 1 complete RS, and several single R's (without "Tsit" notes) as it moved, low, through a hedge-like patch of scrub

Gameropes, May 15, 1963, IX

After all these observations — but without looking over earlier notes in detail, I would suggest that the motivation of all the display patterns of Yellow-legs are as follows

PN's = Frustrated pairing drive.
BW = (Only by ♂'s ?) Frustrated cop. drive.
St = Hostile.
ESt = " with relatively strong retreat component.
FSt = " with relatively strong advance component.
R = Aggressive Probably usually at least fairly high intensity
Bu$_{33}$ = Hostile, moderately high intensity. Probably only uttered with St ???
SR = High intensity, hostile & sexual
♀ = High intensity. Hostile. Only combined with St when R and/or Bu$_{33}$ also uttered ???
BL = (Only by ♀'s ?). High intensity. Hostile Only combined with St when ♀ & Bu$_{33}$ also performed ???
BF = Indication of copulatory motivation.
TV (♂ form) = Indication of copulatory tendency (but probably when this tendency is at least relatively weaker than when BF without TV is performed ?????????)

Cyanerpes, I — May 16, 1963 Barro Colorado

Going back to watch Pair II. Arrive 5:53 a.m. Still too dark to see much.

Birds waking up 6:00 a.m. ♂ approaches ♀ with ↓t + Buzz. Too dark for me to see well. Obvious, not copulation.

Two birds just sitting more or less quietly now. Occasional flight from perch to perch. ♀ stretches + preens

6:10. ♂ flies to ♀ lands beside her. Feeds her. No pre or post feeding display by either bird. Then ♂ just sits beside ♀. Once both birds do buff ↓t, one or both utters Buzz; but otherwise no display. Both just sit quietly. Still 6:15. Both, especially male, fluffed all over.

Both start to move around. ♂ does buff ↓t, with BF + Buzz whenever the two come close together

Back to sitting close together again. ♂ again very fluffed all over ("submissive"?). ♀ much less so

Down to feed together 6:30 No display. Then up again. One or both bird(s) utter buff Buzz (with ↓t?) when ♀ lands beside ♂. Then sit together as usual. About 4 inches apart. ♂ generally fluffed all over.

♂ general fluff

♀ preens.

Cyanocpes, May 16, 1963, II (116)

The birds seem so completely relaxed, sluggish, & friendly today — I wonder if they had a successful copulation this morning before it was light enough to see them ???

♂ is so sluggish he seems to be sick. General fluff becoming more extreme. Frequently "looks down at ground".

But then the 2 birds start to fly around again. ♂ does St with BF & Buzz when landing near ♀. Again

When the ♂ moves, he seems perfectly free. So all this general fluffing may be pure display. Looking down may be ant. mov. of Bill.

Birds down to feed, then back up to sit as before. Then fly about a little. ♂ does St with BF & Buzz whenever he is close to ♀.

♀ is definitely dominant over male. He retreats whenever she advances toward him. Some of these retreats are performed while the ♂ is still in St & BF.

Visitor mild ♂ back 7:04. II's rush to repell him. Fight with St, Buzzes, & R. And then they suddenly start to peck one another!!! Female the aggressor. While visitor is out a few inches away. This fight between II ♂'s & ♀ is obviously redirection

Visitor leaves. Then ♂ II starts to move around ♀ with St, BF & Buzz. She turns to him and does SR in H. He stops display

Cyanocpes, May 16, 1963 III

Both birds ♂ & Buzz toward an Anole in their cage
Both back to sitting as before 7:12
Both down to feed. Back again. ♂ stands near ♀ w ♀ with BF & Buzz. Also performs 6 or 7 definite regular Bowing movements. Quite mechanical looking. Low position; not very low. ♀ flees away, ♂ stops displaying.

♂ is probably under stress of very strong motivational conflict today.

Leaving myself 7:25 a.m. Birds back to sitting as before.

I have had a single ♂ Red-leg alone in an outside cage by itself near the II Yellow-legs, for some months. Yesterday, when I began to watch the latter, I noticed that the Red-leg (whom I shall call "A") was uttering long series of high-pitched, moderately loud, "Tseeeeet" or "Seeeeet" notes. While sitting still. After some minutes, it began to utter some HCN's with the "Seeeeet" notes, and eventually stopped the latter, continuing to utter HCN's alone.

This series of "Seeeeet" notes was certainly very reminiscent of the DC of some tanagers and finches. But since I was sitting quite close to the bird while it was uttering the notes, I couldn't be sure that they were not purely or primarily inaudible.

This morning I tried to find out.

Began observations 5:53. Still dark. Standing farther away from the cage than yesterday.

Bird is already uttering "Tseeeeet" or "Seeeeet" notes. Interspersed with occasional "Tsit" or "Sit". Series quite irregular, with rather long pauses. More regular than most DC performances of tanagers and finches.

Cgaverpes, May 16, 1963, IV. (118)

When it finally becomes light enough to see the bird, I find him sitting in a corner of his cage, halfway between ground and ceiling. Looking from side to side at irregular intervals while he utters this "feeeet" Notes.

Typical verses consist of: "feeeeet seeeeet tsit seeeeet seeeeet seeeeet seeeeet tsit seeeeet tsit seeeeet tsit seeeeet seeeeet seeeeet seeeeet....."

The bird begins to interrupt these verses of notes by flying about 5:58 a.m.

Then he starts to utter HCN's when I come closer to the cage. So I move back again 6:04. The bird is uttering both "feeeeet"s and HCN's in irregular sequence sitting same place as before. This seems to be favorite station. He has hardly uttered notes anywhere else. Sitting in semi-erect unmotivated looking posture. But with CR throughout (during both "feeeeet"s and HCN's, as well as the pauses between them). Looking from side to side

6:10. Back to uttering pure "feeeeet"s with occasional "tsit"s as before. Still with CR throughout. But CR not very extreme

Then goes back to mixture HCN's and "feeeeet"s. Then falls silent for long period 6:20. During later period, until 7:25, just utters occasional "feeeeet"s and/or HCN's at very long and irregular intervals

I think that this "feeeeet" (or "tsit") performance must be considered a form of DC. All very nice from a comparative point of view.

"feeeeet"s of this species presumably largely or completely learned

** ogous with the "PN"s of Yellow-legs.

I am sure that such "feeeet"s are among the notes that I called "CN"s earlier. See especially the behavior of ♂ described on June 12, 1961, page 98. But now I think that the "real" CN's of the species are shorter "Zit"s. The "Zit"s uttered during the DC this morning may have been typical CN's. But they were quite loud & sharp (probably louder than the "feeeet"s). They may, conceivably, have been some form of SHN!! I must check on this further

The mate of this ♂ has been kept in a cage in the animal house (with another ♀ Red-leg) for some months. I am going to see what happens when I put her back with him.

Putting ♀ in 8:22 a m

♂ perches near her. Utters Wh Notes in unrituals & postures with CR and Yiffy. Then stands silently. Then goes closer with more CR and Yiffy. Then stands silent with CR and Yiffy. Utters a few soft muffled "Feeeet" Notes & quit climbs, exhausted to side of cage. ♂ now has CR but no Yiffy (Yiffy must be relatively vocal & high intensity). ♂ now, 8:26, flying about with muffled "Feeeet"s. (These notes may be intermediate between typical DC or PN notes and typical Wh Notes.)

♂ suddenly goes into ft-TV with CR and Wh Notes when landing near ♀. But stops immediately. Back to flying with muffled "Feeeet"s & sitting in weak H or semi-H.

♂ stands with CR and Yiffy uttering muffled "Feeeet"s Then back to flying as before 8:30 a m. Retreats when female moves. Then both back as before

♂ again retreats when ♀ advances.

♂ now utters muffled "peeeeet"s at regular but long intervals. Both when flying and standing. These "muffled" notes are not so much softer than DC Notes as lower-pitched and slightly hoarse.

♀ seems to have been silent throughout, so far 8:34. How she is preening.

8:38. ♂ still flying about, uttering "muffled peeeet"s (I shall call these "MPN" for the time being), while the ♀ just sits quietly.

♂ utters one Wh Note, flies away, when ♀ flies to him.

♂ lands near ♀, utters Wh Notes in weak St with extreme CR and Wflgs. Then retreats when ♀ advances toward him. Again ♂ utters long series Wh Notes ("Whee-zhee") when landing near ♀ then flies off again.

Incidentally, the vocalizations which I called "HAC" or "GHAC" in my earlier notes were certainly Wh Notes.

♀ is now quite fluffed, all over body, while she sits 8:44. ♂ still flying about with MPN's. Still utters long Wh Notes when landing near ♀. Also a few longer 3 or 4 Note Wh series occasionally in same circumstances. Then are quite warbling in effect ♀ doesn't respond, or just looks down at the ground. CORRECTION: I don't think that she looks down, she just turns her head to look at him. Head usually lowered somewhat at same time (but bill remains more or less horizontal). This is obviously partly homologous with SR pattern of ♀ Yellow-legs, but I have yet to hear this ♀ utter notes in such circumstances.

Birds still behaving as before 8:57 a.m.

♀ is certainly dominant. ♂ retreats whenever she advances to and hum.

9:05 Moving away a little, in case birds are disturbed by my presence.

9:11. ♂ still flying about MPN's as energetically as ever. Still no change 9:23. Most of the time the ♂ flies about as far away from the ♀ as he can get. Almost all his MPN's are essentially single. Only very occasionally does he utter a doublet —— He hasn't approached the ♀ with Tib Notes for a long time now. It is beginning to look as if she isn't in reproductive mood.

I wonder if ♀'s of this genus lack a real "soliciting" pattern? Speak of the devil. The ♂ does approach the ♀ with Tib Notes, 9:31, but she turns her head and jabs at him. Her head was lowered, but the bill kept horizontal as usual during this jab. Apparently quite silent. ♂ retreats immediately. Starts to fly about with MPN's again.

I suppose that the "MPN"s may well be the real "PN" pattern of the species (?).

9:35. I suddenly hear a huge long burst of urgent PN's from the Yellow-leg cage. Pair II. Rush over to find that the ♀ has some how managed to get through the wire into the next cage!! PN's presumably uttered by one or both of the birds suddenly discovering that it had lost a mate. This is really conclusive proof that the PN's of the species are produced by frustration of pairing drive. (Neither of the birds had uttered a single PN during the previous 70 minutes I had been watching the A Red-legs.)

Incidentally, the sound of the Yellow-leg PN's caused the A ♂

Cyanerpes, May 16, 1963, VIII

III* Red-leg to fruit, silent, hanging on edge of cage.
Stopping observations 9:40, as boys are down making repairs

Cyanerpes, I

May 17, 1963
Barro Colorado

Going to look at the A Red-legs briefly this morning
Arrive 5:48 a.m. Still dark. A ♂ & ♀ both apparently
silent. The two birds are not sitting together. Apparently have not
slept together. POSSIBLE CORRECTION They may have been only a
foot apart. At least they are that close now 5:55 a.m.

♂ begins to utter DC "keeeet" Notes in this position 5:56.
Facing the ♀, looking from side to side. Performs occasional preening
movement between notes. Rhythm of notes slow but regular. Then
♂ shuts up and starts to fly around 6:00 a.m.

♂ now apparently sitting quietly out of sight. Then ♀ wakes
up, starts to fly about. One bird utters burst of MN Notes. Can't
see circumstances. Then ♂ back on perch, alone, uttering DC "keeeet"
Notes as before Then flies about some more. Utters one MPN in flight
Then back to DC as before. This DC has not included any "shit"
Notes so far 6:06.

♂ approaches ♀. Utters MN Notes as he does so. (With trace
of fit??) ♀ immediately flies at him, attacks him, drives him off.
Both birds fly about. ♂ utters occasional single MPN.
So, I think, does the ♀. ♀ supplants ♂ twice 6:09. ♀ also utters
single HCN's from time to time. ♂ seems to have stopped DC completely.

Cyanerpes, May 17, 1963, II

In case my notes earlier today are not completely clear, I should add that the ♂ was always some distance from ♀ when he uttered DC and/or she was not reacting to him overtly at the time.

♀ goes down to feed 6:14. ♂ remains above, at first. Utters 2 "feeeet" DC Notes after ♀ leaves him.

Both birds up, flying about. ♂ utters MPN's in flight. Also one HCN. ♀ supplants him repeatedly. He utters 2-note series of Wk Notes during some of these supplants.

Then ♂ sits quietly while ♀ flies around. ♂ largely silent. Utters occasional single DC "feeeet", MPN, or HCN when ♀ is not close. Also three utters single DC "feeeet", looking at ♀, when ♀ lands near him. The ♀ is probably extremely frustrating to him!

Then ♂ utters Wk Notes and retreats when ♀ lands near him. No trace of it with these notes. 6:25.

During all or most of this period, both when silent and when vocal, ♂ has CR. Also very slight trace Black flgs.

♂ sitting alone. ♀ lands about 6" away. ♂ walks toward her, hops over her, starts to walk toward her again. ♂ utters Wk Notes during these approaches. Also has CR. But no other display patterns. ♀ flies off. ♂ relaxes.

Some of the ♂'s Wk Notes may be very low intensity.

♀ is definitely uttering MPN's as she flies about. 6:37.

♀ lands near ♂. He hops toward her. Uttering Wk Notes, with definite brief flt. She looks at him. He stops display. She flies away.

Leaving myself 6:35 a.m. as it doesn't look as if anything interesting will happen.

Aguaverpes, I — May 16, 1963
Barro Colorado

Unfortunately the ♀ of the II pair of Yellow-legs was taken by a snake on the night of May 16-17. As far as I know, her ♂ did not utter DC on the morning of the 17th. I am going to check, bec I fly, to see if he does today.

Arrive 5:55 Still darkish.

On my way down hill, both this morning and yesterday at the same time I heard a bird (presumably wild) utter DC quite like the DC of the captive A Red leg ♂. Unfortunately not able to see the bird.

A Red leg ♂ begins D.C. 6:01 a.m.

II ♂ Yellow-leg utters series of "Tit" Notes, apparently ordinary CN's, while sitting quietly, looking from side to side 6:02.

6:03. Wood Rails begin calling. Quite impossible to hear anything else. Finally shut up 6:06.

II ♂ Tit sitting silent now. Semi-flopped. Looking around with regular head movements — not regularly side to side. Thus looks almost like the silent watching of SCBT's at dawn!!

A Red leg ♂ repeatedly approaches ♀ with St & Wk Notes. She turns and bruises him off (usual low-posture) each time. Then ♂ goes back to DC.

The II ♂ Yellow leg still sitting in same way 6:11. All the time he has been sitting in a semi flopped posture. Much less extreme than the "appeasement" flopping he did the second day he was with the ♀.

6:12 Finally moves a little. Still silent.

6:15. Back to sitting as before. This time he does utter "T

Cyanocorpes, May 18, 1963. II (25)

Notes !!! At irregular but lengthy intervals. (Intervals much longer than in DC of Red legs) Notes also comparatively soft — softer than those of Red-legs. Parents superseme ??? Still parents fluffed, looking as ozzed.

Have to leave myself 6:17 a.m.

Bl. & Or. Stripes

September 1, 1963
Above Tinduari

SEE ALL NOTES ON GENERAL MIXED FLOCKS
THROUGHOUT THIS TRIP

Today, 6:20 a.m., saw a form of Bl. & Or. Stripe "song" never observed before. Long series of harsh "Zrit"s. All same pitch. Repeated rapidly, but in rather irregular rhythm. The bird uttered these notes from a variety of apparently unrelated standing postures, while moving from dark but moderately low recess.

Also uttered buzzy R's. Some quite like R's heard at Lawn in tone and loudness. Others soft and remarkably mechanical-sounding and humming-bird-like.

These R's seemed to be interspersed among the "Zrit"s in a random manner.

I think that such series of harsh "Zrit"s may be quite common among the birds here. I think that I have heard them before—probably many times. But unfortunately I always assumed that they were uttered by hummingbirds.

February 27, 1964
Above Tinduari

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

the ground, not too far apart

Now we a bird utter "PN" of this type while apparently alone

Birds continuing to behave as before 6:45.

One WBl introduced by slightly hoarse "PN". By bird alone

But all or most other WBl's without introduction

Neither bird has shown any sign of n.b. so far this morning.

One bird suddenly chases the other on ground! Both birds hopping. One bird utters long pure trill during chase! No other vocal pattern by either bird

Could these both be ♂? ???

Leaving 7:00 a.m.

April 28, 1963
Barro Colorado

Arrive Orange-bell cage 6:00 a.m.

Still dark. Birds moving about normally. One bird utters "PN" while alone. Then flies about actively, uttering "Tut" notes. Then begins to utter WBl's. Some WBl's with "PN" introduction. Uttered by bird while alone, i.e. far away from companion, as usual

Then an aerial chase. Accompanied by ("Tut" - "Tuck"s) Brief. Chased bird utters particularly hoarse "PN".

"Tsecada", then WBl's, immediately after end of chase

Now, 6:08, birds just flying about normally. One bird utters quite a lot of WBl's from time to time. Without introduction, usual postures

Amenon Apr. 28, 1963 II. (37)

Wbl's uttered both while perched and while standing on hopping on ground. Not uttered in flight.

The two birds are keeping as far apart as possible most of the time. Occasionally "supplanting" one another; but seldom coming very close in order to do so.

NOTE: I am a little confused about the "SN" patterns of this species. The notes I have been calling "SN"s during the last two days of observations are almost certainly the same as the ones I called "Whew"s during earlier observations. But I am not sure that they are exactly the same thing that I called "SN"s earlier. Probably yes — but..... The "SN"s heard during the last 2 days have been slightly hoarse — at least most of the time. My notes would suggest that the "SN"s were not. Could the "SN"s heard during the last 2 days be intermediate between "real" SN's and HAC ???? What has happened to the HAC patterns in the evolution of this species ??? Is absence of HAC one of the characteristic features of the evolution of the Ostapetes - Pellioplocus group of bush-finches ???? If so, has this permitted the evolution of a hoarse quality in other non-homologous vocal patterns ????

Kwanyus, I — October 27, 1963
Below Incline

Same place as yesterday morning

6:33. See single cyanocephala loop in area above Incline
5-10 ft above ground. Apparently alone. Utters peculiar "song"
Phrases like "Ja-zeer-zeer-zeer-zeer-zeer"

6:40. Odor of cyanocephalas in low bush area. One bird utter-
ing "Ja zeer zeer zeer" phrases. Usually, I think, when it is some
what separated from mate

One of these birds in collecting area

8:15. cyanocephala beginning their noisy loop-open scent. About
1 ft above ground. Utters 2 song phrases. Each "Ja-ah zazee zazeer"

1350 ft 8:40. Despite many cyanocephala flocks of twenty
and "Zeeree" phrases. These phrases slightly different from the ones heard
yesterday. "Zee wee zee wee zee wee ..."

Kwanyus, I — January 24, 1964
Ilorin

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

Kwanyus, I — February 23, 1964
Ile Lugo

SEE TODAY'S NOTES ON MIXED DIGLOSSINI
Possible gregariousness among bouvieri

Attapeltes, Apr 5, 1963 II. (77)

Most of crown rufous Forehead black White stripe on each side of black forehead.

The birds uttered "Trit" Notes, with locomotor, ant. woos., and alt. gait trace CR, when in bush near me.

A few minutes later, I can hear Attapeltes like noises in neighborhood, without being able to see the birds. Very faint, thin, high-pitched "Ja-nee-nee nee-nee neeeee neeeeee neeeeee" type phrases. Faint quality of calls quite reminiscent Chiriqui Attapeltes.

These birds were certainly quite close, not in mixed flocks.

This will be no. XXXIV on list

Attapeltes, I. April 8, 1963
Mr Tacoma

Working on Chuntacocha ttes morning. A Ravine area, just below A Pert. 6:00 a.m. Hear what is presumably local "82" song. "Keeweeet keeweeet keeweeet wheeet chuk-chuk

— —

keeweeet wheeet chuk-chuk keeweeet

— —

keeweeet keeweeet wheeet chuk-chuk

— —

,,,,,,,,,," Ad infinitum. Irregular insertion of burglarbee whistles

with triplets of 3 descending notes. Intervals between utterances and the triplets somewhat variable.

Bird uttering these notes seems to be sitting still without moving. Unfortunately can't see it. Bird hidden in bush, approx. 6 ft above ground.

This species presumably does not have a DC pattern.

Song over 6:23, without my having seen the bird.

6:40 a.m. Considered further on bear another presumed PL utter ing "Keewee keeyoo keewee keeyoo ....." song, with occasional descending triplets inserted at irregular intervals. Again couldn't see bird.

NOTE: I might add that the general tone of all the notes heard this morning was apparently identical with that of the notes uttered by "PL"s actually being observed on previous occasions

Attapetes, I — October 24, 1963
Bolivia

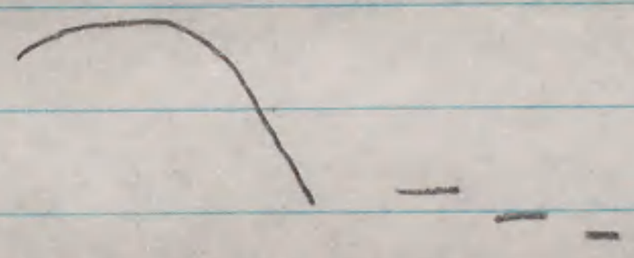
SEE ALL NOTES ON GENERAL MIXED FLOCKS TROUGHOUT THIS TRIP

This morning I worked below Mudanani, in the Yungas. ca 9000-9550 ft. Lots of what I suppose is a subspecies of rufi nucha (XXXVIII) around. Usually in pairs. Probably breeding.

8:10 a.m. See one or (much more probably) two of these rufinucha calling low in bush. Accompanied by "Zeeezeeezeee zeeezeeezeee" type vocalization. Presumably "greeting" like that of Quito birds

Altapetes, I — October 25, 1963 Below Indiana

Working this morning same place as yesterday morning.
SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS
A few incidents were particularly noteworthy.
ca. 8:05 a.m. Hear a rufinucha singing. All phrases essentially identical: "Wheechoo chew chew chew"



Sometimes an extra "chew" was added at the end.
No R component in this song.
Finally see the bird. In low branches of a tree 4 ft above ground. Also sings from other sites before and after.
The birds around here seem to be highly motivated in general. Their song phrases may be the highest intensity songs of the local population
ca. 8:30. See a pair of rufinucha. One emits something (n.m. ???) in bill. Land in bush, about 10 ft above ground. Utter "quetzing". "Zeee zeee zeee zeee zeee zeee -R"

Altapetes, I — October 26, 1963 Below Indiana

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

Altapetes, I

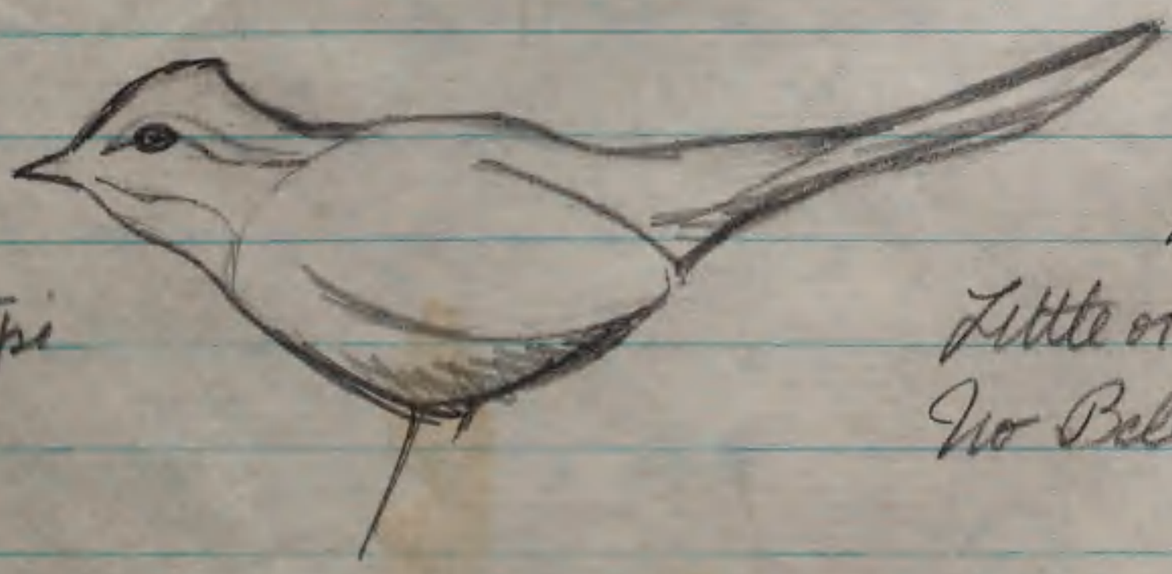
October 27, 1963
Below Medinduri

Working same place today as yesterday
At 5:43 a.m. (or a little earlier), I begin to hear what is obviously an Altapetes type song. Very thin and high somewhat plaintive. Very reminiscent of the Chestnut-capped Bush-finch in Chirigui. 4-note and 2-note phrases in alternation. Comme ça:

"Da-seeeee-seeeeee-srrrrrr" "seeeee-srrrrrr"

All the songs heard clearly apparently uttered by one bird alone. But off in the distance (perhaps 30 yards away) I can hear another bird, apparently answering the first with similar songs.

By 6:00 a.m., the songs are becoming slightly "disorganized". Not always in such nice 2-note and 4-note alternation (altho otherwise still the same as before). It is at this point that I finally see one of the singing birds. It is one of the local "torquatus". Singing in posture comme ça:



Distinct white stripe above eye.

Definite CR
Little or no Ruffy
No Belly Streaking

The two "torquatus" continue to sing for some time. Their songs overlap to a very considerable extent, at least at times.

They do not, however, come together.

Both birds also utter an appreciable number of "Jrit" notes between songs.

Why is the "song" of these birds so different from the "songs" of torquatus near Quito ???

Three birds were found in very thick low scrub near the mid e of the road. A pair of local rufinucha also wents the exact same same clumps of scrub at frequent intervals, but they were neither au dible nor visible at the time that the "torquatus" were singing.

The local population of rufinuchas also vents lighter or sparse er scrub than any I have seen "torquatus" in. Indeed local rufinu cha also go higher in trees than any "torquatus" I have seen. As noted before, rufinuchs are almost brush-strugers in their habitats.

The fact that the rufinucha did not sing at the same time as the "torquatus" is suggestive. Is there some type of mutual inhibi tion between between these species, comparable to the mutual inhibitio on between species of Diglossini in some areas? (If so, it might be further evidence that the Diglossini and the bush finches are closely related.)

SEE ALSO TODAY'S NOTES ON GENERAL MIXED FLOCKS

October 31, 1963, Mt. Imbabura

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

Altapetes I

January 24, 1964
Atalaya

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

Altapetes I

January 25, 1964
Atalaya

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS (descriptions of rufinucha feeding on flowers by Diglossine methods)

Altapetes I

January 29, 1964
Atalaya

SEE TODAY'S NOTES ON GENERAL MIXED FLOCKS

It was my impression, this morning, that the roups of rufinucha seemed to be positively correlated with roups of the subspecies (presumably not "roup" subspecies) of torquatus. I.E. when one vocalized, the other tended to do so simultaneously. But I am not sure about this. And I have no idea which species was the actor and which the reactor.

February 4, 1964
Below Palca

Altapetes I

Working Camp, ca. 8700 ft. Rainy.
6:50 a.m. See single Altapetes. Alone. Obviously schistaceus. Presumably tarapacensis (I didn't note black and white on the fore-

Cyclarhis — April 16, 1962
Cerro Punta

Rufous-browed Pepper-shrike = gujanensis =

I suddenly became aware of one of these birds ca. 8:15 a.m., near the upper pasture, singing. Loud clear thrush-like phrases At first, the phrases were rather long. More or less comme ça: "Tuh wheee tawheee wheee too-uh-wuh" Some variation gradually becoming shorter as morning wore on. By 8:50 a.m., the bird was uttering but "Tsee-ta-wa"s. Such phrases may be strictly homologous with the flourishes of other species. Each phrase was always separated from preceding and succeeding phrases by a very definite pause. Intervals of silence probably always longer than the phrases themselves. Around 8:40, the bird was uttering approximately 5 phrases per minute, but I think that it was uttering phrases slightly more frequently earlier. When I first became aware of the bird, it was sitting, not exposed, in a moderately dense tangle, approximately 25 ft. above the ground. In more or less erect, apparently unperturbed posture. Then it moved farther away and I never saw it again. Obviously singing from several different perches

This bird was apparently alone throughout the performance. Such songs are probably not hostile. Probably produced by thwarting of some sexual drive(s).

Cyclarhis, I — April 17, 1962
Cerro Punta

Arrive ppr. upper pasture 6:05

What is probably the local pepper-shrike begins to sing 6:10 a.m. A burst of about 10 phrases. Longest phrases toward end. More or less "Jah-ich ta-weeee ta-weeeee ta-weeeeeee" Beginning phrases shorter & softer, but apparently basically similar. Bird shuts up within a couple of minutes.

So this species may not have a distinct D.C. pattern

Hear another burst of song, in distance, 7:20. Like the phrases heard earlier this morning rather than the phrases heard yesterday.

Working down on Lewis's place this afternoon.

4:20. Hear a few phrases of Pepper-shrike song, more or less like song heard yesterday. "Jee swee ta-swee-yoo" or "Jee-swee-ta ta-swee-yoo" Bird shuts up after a minute or so

Then a couple of more phrases "Ja-swee ta sweeyoo"

This type of song is most easily distinguished from wren song by the fact that the individual phrases are always separated by distinct pauses

Then a long "duet" between 2 birds. First I hear a lot of phrases from one tree "Ja-bah-weeyoo" Relatively invariable. Then one bird flies out of tree into a tree about 50 ft away. Apparently left at least one bird in old tree. Then the bird who flew out and the bird who remained behind do a duet. Sometimes alternating a single phrase each quite nicely and regularly. Sometimes overlapping a bit, one starting a phrase immediately after the other has begun one. This continues for at least a minute. All phrases eventually identical like phrase described immediately above. After some time a 3rd bird also utters a few phrases in distance. Both "Ja-bah-weeyoo"s and "Ja-ha-weeyoo-weeyoo". Eventually bird who flew out of tree shuts up and disappears. 4:35 p.m.

The only bird I saw uttering these phrases was the one who flew out of the tree, fitting more or less central. Neck more or less retracted between phrases. Then neck stretched up to a remarkable extent as each phrase is uttered. Probably vertically. Head kept approximately horizontal.

The whole performance was quite suggestive of a boundary dispute

A few seconds after duet has stopped, the remaining bird (the victor?) starts uttering "Jawhoo-ta-ha-whoo" phrases. Usual rhythm. Continues for a few minutes and then moves off. I can still hear it, still uttering similar phrases 4:50 p.m.

I think that all these phrases may be homologous with some or all "Flowerbies" or "Day long" other species

I shall call the bird that remained in tree "A".

A still singing regularly in distance 4:52. Phrases now sound more like "Ja-ha-swee-yoo"

The variations in these phrases are particularly reminiscent of the variations in the Flowerbies of BCBT's

All birds completely silent by 4:56. Still silent 5:15. This may be further evidence that phrases were correlated with dispute. If they were attempts to attract mates, one would expect them to continue longer

Another burst of phrases 5:45. About 6. Probably by A. More or less "Ja-wa tsee-ta-wa". Apparently alone feeding. Then off. Gives a few very abbreviated phrases. No more than "Ja-wa" or "Tsee-wa". Then back. Utters more "Ja-wa tsee-ta-wa" phrases.

The general proportions of these birds are quite Chloropsingus-like

Also general tone coloration

Cydaris, I — April 16, 1962
Cerro Punta

Working in Lewis's place this afternoon.

Come across a Pepper-shrike 3:32 p.m. Immediately begins to utter song phrases "Wheet-tak-ba-wheeee" Unfortunately I can't see head & neck of the singing bird. A few seconds after starting this phrase, another bird some distance away starts to answer by uttering similar phrases. Then my bird flies away, and both fall silent.

Come across another or the same bird 3:40 p.m. Utters "Whee whee to-whee-yoo" phrases. Hopping from tree to tree. Obviously reacting to me. (So these "Whee whee to-whee-yoo" phrases were almost certainly hostile, and may have been produced when escape was relatively strong.) Uttered phrases when neck was stretched up to an appreciable extent; but did not seem to raise neck higher during phrases than between phrases.

All the phrases uttered during this reaction were essentially identical. Once a bird of this species starts to utter a particular type of song phrase, it usually or always continues uttering same type of phrase for some time.

Are the different types of phrases really produced by different types of motivation ???

This bird also uttered little series of 2 or 3 short sharp notes between song phrases. Probably when hopping from perch to perch. Quite loud and harsh. Might be transcribed as "Chuck". Presumably CN's or (more probably) SHN's

4:55. Another Pepper-shrike begins to sing. This bird is

most certainly not disturbed by me. All its phrases are more or less "Ja-ouee-uh ta-ouee-uh ta-a-ouceyoo" Utters about 10 phrases then flies away and shuts up. Then utters a few more abbreviated phrases. Then shuts up again.

This species is almost always very difficult to see. Usually stays near tree-tops, but just under or behind top layer of leaves

5:40 p.m. Now a bird is repeating "Whee-a-ta-ta-whoeeoo" phrases Probably a reaction to my appearance. Bird eventually moves off. Then songs must be Dubois.

Cyclarus, I. April 19, 1962
Cerro Punta

Working just below upper pasture this morning

I did not hear a Pepper-shrike until 8:50 a.m. this morning! Then a bird began to utter relatively long phrases, more or less like the ones heard on April 16, 1962. Probably the same bird as the one heard on Apr. 16th.

All the songs I have heard so far would certainly seem to be "day songs".

Working along ravine just above upper edge clones this afternoon 4:35 p.m. Suddenly found myself face to face with a Pepper-shrike in a nearby tree. Bird just looks at me. Then starts to hop away, pausing to look at me again from time to time. While paused, occasionally looks straight down. "Verabirdaneu", for a second or so. Once BW's "Whitead!" Then, after it has moved approximately 10 ft away from me, utters 5 or 6 long phrases. Softer than usual, but otherwise undistinguished. Moderately long. Ending in usual "weeyoo." Uttered from

perfectly normal, rather upright, utters pertwee. Neck not stretched or raised.

Cyclarus, I April 20, 1962
Cerro Punta

Arrive Tevis's place 5:45 a.m. Everything quiet. Still dark. Wren Pepper-sounds heard 6:22 a.m. Well after dawn. Relatively long phrases uttered in usual rhythm. "Whee-ah-wuh-ta-weey oo"s. All essentially identical.

Same bird still singing similar phrases 6:37. Some phrases more abbreviated than earlier. But not all. Bird tends to utter series slightly abbreviated phrases, then series longer phrases, etc.

Bird finally shuts up 6:38 a.m.

Chlorospingus, I — April 17, 1962
Cerro Punta

Working just below upper pasture again this morning.
Early in the morning I watched two incidents performed by the same bird or two different birds which I was sure, at the time, was (were) a Sooty-cap (s). But the light was very bad at the time; and I found a Brown-cap in the area later. So I can't be sure of the identity of the performing bird (s). Nevertheless, the incidents are described below:

? 6:28 a.m. Two birds apparently feeding in high vegetation. Then one (specific and generic identity unknown) flies away. The other, apparently a Sooty-cap, remains behind, perched on top of a high bare branch. Immediately begins to utter "Tut tut tut tut ...." With lots of flicking movs., but no Q. Continues almost 5 minutes. Then flies away.

? 6:40 a.m. A single Bush-tanager, apparently a Sooty cap, flies to a high exposed perch (about 30 ft from tree in which a bird utter "Tut" notes earlier). Lots "watching" in usual Sooty cap fashion. Most of the time quite silent. But just after landing it uttered a "Tseeet" notes!

Chlorospingus, I — April 18, 1962
Cerro Punta

Much to my surprise, I saw a Brown-cap attracted to a dispute among Yellow-throated Bush-finches this afternoon at Lewis's place (see today's notes on Atlapetes).

Chloropipiques, I — September 16, 1962
Teleférico #1

Will! Will! There seems to be a local form of the BCBT here.

Came across a pair of these birds at 2:40 p.m., below station. They may have been tail end or flank party of a mixed flock that included o'Albi (see today's notes on Mixed Diglossins)

These birds look rather different from the Chiriqui form. Caps are blackish. There is a white mark around eye, more or less the same shape as the corresponding mark of the Chiriqui birds. But these birds also have a separate white spot behind eye.

I shall mark notes on this form ~~xxxxx~~. Presumably the subspecies is

The birds utter lots of "Tit"s and "Tseet"s while flitting about in trees near me. Then disappear.

Interestingly enough, there was a squirrel in a tree about 20 ft from them. Reddish brown body & head, bright yellow tail with black tips. Perhaps this species has a fatal attraction for squirrels?

Chloropipiques, I — September 17, 1962
Teleférico #1

1:15 p.m. Come across a large mixed flock, slightly above station (see today's notes on mixed Diglossini) Including BCBT's

These birds did not have a round white spot behind eye. Was the round spot seen yesterday only individual variation? (I saw several birds today. All similar. No round spot. But they all had BC

Albuquerque, Sept 19, 1962, II (71)

(Faibly brown caps, else yesterday's birds)

Here birds uttered lots of rather soft plaintive "feet" or "feat" notes. Nothing else. Surely this is rather different from the BCBT's of Chiriqui?

Here birds may have been acting as the "nuclear vanguard" of the flock, but not as conspicuously so as is usually the case with the Chiriqui BCBT's.

Is this form less important than the Chiriqui BCBT as a pan-nuclear species simply because it is less noisy ???

Albuquerque, I September 22, 1962
Road to La Ayalita

Cinnamon bird BCBT's several times this morning.

7:10 a.m. 7600 ft. One bird with a mixed flock. Included some unidentified warbler(s) and flycatcher(s), as well as one bird that was probably a WM Attapetes. BCBT not noisy; pair fully completely silent. Remained low in tree (about 10 - 15 ft. above ground, while the presumed Attapetes went into shrubbery).

8:08 a.m. 7500 ft. See a single BCBT. In top of low second growth scrub, quite far from trees. Uttering soft "Peek"s or "Pit"s. This bird may or may not be associated with a single Hirundo in an oropendola which turns up in the same area a few seconds later.

The local BCBT's seem to be remarkably quiet. Presumably related with their (apparently) minor importance in mixed flocks.

Both BCBT's seen today were lacking the "second" white spot on the sides of the head

Chlorospingus I

Oct 15, 1962
Aqua Dulce

The local subspecies of ophthalmicus here is flavopectus.

= ~~xxxx~~

It seems to play an important rôle in mixed flocks (use to-day's notes on subject). But I have never seen more than 2 birds of the species together.

Two BCBT's seen in one mixed flock today, at 7950 ft., may have been parent and young. One of the birds followed the other, uttering "3 beeet 3 beeet 3 beeet 3 beeet 3 beeet ...." , and performing occasional S (from apparently unmutualized postures).

Other BCBT's seen in mixed flocks may have uttered bits of single "beeet" Notes and/or long R's (without flourishes).

I did not see any BCBT's today which I could definitely classify as being apart from mixed flocks.

Listed below are comments on individual cop. attempts.

1—3. Obviously unsuccessful

4. Obviously unsuccessful. The ♂ BV's repeatedly immediately after the attempt

5. Obviously unsuccessful. ♂ utters buff R after attempt.

6. Obviously unsuccessful. The ♀ begins to peck and pull at plant fibers immediately after attempt. Apparently first sign of n.b.!

7 & 8. Obviously unsuccessful. ♂ utters buff R after one of the attempts

9 & 10. Almost certainly unsuccessful. ♂ utters buff R's both before and after both attempts. (Three R's, and preceding ones, accompanied by moderate V-flg.)

11. 6:55 a.m. Possibly successful. For the first time, the ♀ remains in extreme BV-TV for several seconds after ♂ dismounts

12. 7:00 a.m. Probably successful. ♀ remains in BV-TV after ♂ dismounts. ♂ also goes into BV-TV immediately after dismounting! Posture like that of ♀. Extreme. Wings spread horizontally, vibrating slightly but not too rapidly. No Wass. Both birds silent, standing side by side, only a few inches apart, facing in same direction. Then ♂ utters buff R, flies away ♀ glares. This was also very reminiscent of Ramphocelus!

13. Brief and obviously unsuccessful. No normal post-cop. reactions.

14. A few minutes after 13, the ♀ begins to peck at n.m. (leaves) again. The ♂ flies to her immediately, behaving in usual pre-cop fashion. But ♀ does not display. ♂ does not try to mount, flies away immediately.

15 & 16. ♂ approaches as usual; ♀ displays; but ♂ flies off without attempting to mount.

A few minutes later (7:03 a.m.), ♀ starts pecking at and picking up leaves energetically.

17. Like 15 & 16, except that the ♂ utters buzzy R's while approaching ♀.

18. 7:06 a.m. Like 15 & 16.

19. Like 15 & 16.

20. Like 15 & 16 again, but ♂ BW's afterwards, 7:08 a.m.

21. Like 20.

22. ♂ only starts to approach ♀, uttering a few "Tsee"s as he does so.

7:10 a.m. An appreciable pause in activity. Birds moving about silently. Completely relaxed. Then ♂ starts to preen. ♀ plays with leaves again. Drops each leaf picked up.

23. 7:17 a.m. ♂ approaches ♀. Uttering notes intermediate between typical "Tsee"s and typical "Tsit"s. Not prolonged like typical "Tsee"s. ♀ does not display. ♂ flies away.

7:20 a.m. Leave myself.

Chlorophanes, I June 14, 1962
Barro Colorado

Arrive to watch birds approx. 5:30 a.m.
Still too dark to see much. Can hear 1 bird uttering occasional "Tseet" notes.

Then birds go back to sleep sitting approximately 1 ft apart. Then ♀ wakes up, flies off. ♂ stays behind.

♂ just sits, looking from side to side. No trace of song or DC. Then both birds fly around. Uttering soft notes. "Tit"s ?

♀ also utters single "Tseet"s (when separated from ♂)

♂ is keeping far apart from ♀ now. Usually silent. Apparently feeding. ♀ still uttering occasional single "Tseet"s.

♀ advances toward ♂. ♂ retreats. ♀ flies away

♂ and ♀ now in opposite corners cage. ♀ preening. ♀ still utters occasional "Tseet" at irregular intervals. ♂ utters occasional "Tseet"s, "Tit"s, and intermediate notes at irregular intervals. Notes of 2 birds not synchronized or correlated in any way.

♂ now sitting in corner, looking outside cage, uttering very soft "Tseet"s at rather regular intervals. A vestigial trace of DC ???? Sitting more or less erect. Looking from side to side. Performing occasional flicking movements. Feathers of head and neck arranged so that black is only relatively small facial mark. Converse.

Then ♂ suddenly flies to ♀. Utters 3 or 4 "Tsee" Notes in flight. ♀ does not display. Looks at him. He flies away immediately. Back to corner behaving as before

♀ suddenly supplants ♂ ♂ apparently utters 3 "Tsee" Notes, in rapid series, as he flies off.

The ♀ would certainly seem to have become dominant.
Again ♀ supplants ♂. No display.
Both birds uttering occasional "Tsee" notes as they fly about cage. Then ♀ supplants ♂ again. He flies off uttering "Tsee-ta tsee-tseeee". Apparently another series of "Tsee" notes.

It would seem that "Tsee" notes must contain a hostile component. Another resemblance to "GHAC" of other species.

Again ♀ supplants ♂. This time ♂ utters 2 "Tseet" notes as he flies away.

♀ now flying about, not particularly close to ♂, uttering lots of "Tseet" notes. Not in rapid series.

Then ♀ supplants ♂ again. He flies off uttering short series of "Tsee" and/or "Tseet" notes. Again ♀ supplants ♂. This time he flies off silently. Again ♀ supplants ♂. This time he flies off, uttering "Tsee-ta-see" (I don't think that such series of notes, containing "ta" components, are really very different from series of pure "Tsee" notes.

Both birds still uttering "Tseet" notes as they fly about. These notes almost appear to be CN's!!

The black of the ♂ of this species may be a hostile signal, but it does not seem to be an indication of alarm, like the black of the RLBH. At no time this morning has the ♂ depressed the green feathers of nape and neck in order to emphasize black, in spite of the fact that he is so obviously subordinate to the ♀.

The ♀ is now uttering many more "Tseet"s than the ♂. 7:00 a.m. All "Tseet"s loud. The ♂ has quite stopped his DC-like series of soft "Tseet"s (actually he stopped it a long time ago).

The ♀ has shown no regn of n.b. or collecting n w. this morn ing. An indication that sex and n.b. are closely correlated in this species

♂ utters series 3 or 4 "Jsee" Notes (no "ta" components) when flying by ♀.

♀ still supplanting ♂ frequently. Usually no display.

Once ♀ flew to ♂. She utters one long "Jseeeeee" Note as she does so. ♂ retreats. But a few seconds later he suddenly flies to her. Stands beside her. Utters "Jee" Notes & buzz R as he approaches and stands. Then he suddenly mounts her and tries to cop. ♀ goes into slight BV-TV as ♂ mounts. Cop. obviously unsuccessful ♂ slips off. Utters R facing ♀; then flies away (Both R's during this incident were accompanied by slight trace of VG-Wff.)

Then, during next 2 minutes, ♂ flies to ♀ twice. Utters "Jee" Notes & R both times. Tries to mount both times; but ♀ flies away both times without display.

Then again. Just as before!

It looks very much as if this sudden outburst of overt sex by the ♂ was released by the long "Jseeeeee" uttered by the ♀!

Now both birds quiet

R may be considered a "usual" part of the pre-cop patterns of this ♂? But quite possibly not a usual part of the pre-cop patterns of ♂'s of well-mated, long-established pairs. Is this another resemblance to Ramphocelus??

Another thought has just occurred to me. Could the R-Resp performances of this species be homologous with the ♀R - "eeyah" patterns of the Yellow-rumped Tanager?

♂ suddenly approaches ♀ again. Utters wries of "Tree" Notes as he does so ♀ doesn't respond in any way. So he flies off

♂ catches insect. Manipulates it then flies to ♀. Utters series "Tree" Notes in flight. Lands right beside ♀. Leans diagonally in front of her and gives her the insect. She eats it happily. Both birds quite silent during actual transfer of food. The ♀, in fact, did not display in any way at any time

♂ again flies to ♀, uttering "Tree" Notes. ♀ doesn't respond in any way. So he flies away

Again ♂ feeds ♀ Just as before. ♂ uttering "Tree" Notes while approaching. No ♀ display of any sort

♂ has never attempted to mount ♀, or shown any indication of desire to do so, immediately after feeding her.

Again ♂ approaches ♀ with "Tree" Notes. No insect. No response. ♂ flies off.

She ♂ has never BW'd after any of these unsuccessful approaches to the ♀.

Birds now back behaving as before. ♂ sitting quietly. ♀ flying back and forth uttering "Tseet" Notes. ♂ does not respond in any way when ♀ lands approx. 1 ft away from him.

Again ♂ flies to ♀. Utters "Tree" Notes, accelerating almost to R. This time ♂ feeds ♀. Twice. (Regurgitating.) ♀ accepts food willingly, but does not display. ♂ flies off.

Back again almost immediately, as before. Again feeds ♀. Whole process exactly as before, except that the ♀ is only fed once.

Again! Just as before. This time ♀ fed twice again

Twice ♂ approaches ♀ with more R. No insect. No response

Chlorophanes, Jan. 14, 1962, IL

Leave myself 8:10 a.m.

Buthraupis, I

October 26, 1962
Ca. de. Aqua Bonita

See a pair of these big Blue & Yellow Tanagers here, 6:40 a.m., 8350 ft. In second growth. Lots of scrub and scattered trees.

Birds have black heads and throats. Otherwise gray blue above, yellow below (with stripe of gray blue extending from back to legs). Reddish eyes.

Obviously B. montana (probably B. m. cucullata) = ~~xxxxx~~

They uttered series of "Tseeet" Notes in fidgety manner, 4. or 5 in a series Loud and "ringing." They also uttered similar notes while feeding on berries in tree, 20 ft. above ground. Also one "Tsit" Note.

All morning I heard loud, rather melodious, Quick-like songs in the neighborhood. "Duh duh-whuh duh-wheee."

? ? ? — — — /

Possibly uttered by same birds.

Buthraupis, I

November 3, 1962
Munchique
Western Andes

Ca 8500 ft. this morning I saw two groups of birds which appeared to be B. montana. In adjacent areas, at different times. One group composed of 5 birds, second composed of 2. The

latter had probably been part of the first group earlier.

The 5 birds of the first group flew energetically from tree top to tree-top. Apparently feeding. Apparently not disturbed by me. The trees they preferred were part of a rather open, second-growth, grove by the road. 20-25 ft tall.

Some or all of the birds of this group were very noisy. Uttered a great variety of calls. Difficult to tell which calls were uttered by perched birds and which by birds in flight.

They uttered a number of series of notes like those described above p. 1. "Tseet tseet ...." Or, perhaps better, "Seee seee seee ...." One to 5 notes in series. Some of these series certainly uttered by flying birds.

They also uttered series of one to five different notes. Most typically "3 reee-weee 3 reee-weee ...." Loud. Remarkably urgent-sounding.

These latter performances seemed to intergrade with "Seee seee ..." performances. Intermediate notes such as "3 heee-wee ee". Sometimes uttered in series of themselves alone, sometimes inserted, singly, in series of "3 reee-weee"s.

Once, a bird uttered a single loud harsh "3 rrrr" Note. This was probably uttered by a perched bird.

Once, a bird uttered a distinctive "Kha kha ba ba". Didn't see the circumstances of this performance.

The two birds of the second group were separated most of the time I saw them. One bird perched alone in tree. Probably uttered series "Seee" Notes as it came in to land. Then uttered "3 reeeeee 3 reeeeeee ...." Notes as well as "3 heee-weee"s

as before. Then flew off with mate

Three of the Buthraupes seen today were associated with a
din flock of other species.

I think that the vocal repertoires of this species, Thraupis
cyanocephala, D. bonariensis, and Compsocoma flaveola may
all be basically similar. Possibly also Poecilothraupis spp.

There must be considerable competition between the various
species of "blue and yellow" tanagers in various parts of the Andes
of South America. This may help to explain why some of them show
so specialized inter-specific behaviors as the presumably closely rel
ated PT & BT. (Incidentally, how does Tangara fit into
this group ???? )

October 16, 1963
Above Chulumani,
Bolivia

SEE TODAY'S NOTES ON MIXED FLOCKS!

Compuzcoma, I

November 2, 1962
Mares
Western Andes

6:45 a.m. 6275 ft. Very wet, apparently mature forest. One or (probably) two C. favonucha ("BYB") = ~~[illegible]~~ feeding in tops of trees, about 30 ft above ground. Taking berries. Utter "Sit"s, either single or in variable, short, not very accelerated, series while feeding. When are then accelerated, into A-Trill, in flight.

I think that one of the birds also uttered series "See see see see see ...." notes in flight. Probably when coming in to land near partner.

There were a number of other tanagers in nearby trees when the birds were feeding, but the BYB's didn't appear to pay any attention to them — or vice versa. (One of the other species around was the Yellow-vented XXVI.) Quite different from the BYB - Blue & Black etc. groups in Central Andes near Medellín.

7:20 a.m. A few feet further on, see a single BYB (the same?) feeding on berries top of tree. Utters a few single "Sit"s, otherwise silent. Again alone.

7:30 a.m. A few feet still further on, see pair of BYB's (the same?) feeding on insects on leaves in top of tree. Quiet. There are lots of other birds in nearby trees. Not reacting with BYB's very obviously. Difficult to tell if they're mixed flocks or not. Certainly less cohesive than central part of flocks seen near Medellín yesterday.

7:50 a.m. Considerably further on. Pair of BYB's. (Almost certainly different. Feeding on berries top of tree. From the leaves, they appear

to be a melancholic. "Berries" may actually be buds.) Largely silent. Occasional "Sit"s. Birds more or less alone. (Pair of no. XXVII in trees about 30-40 ft away.)

Retracing my steps 8:30 a.m.

8:45. See a single B&B feeding in top of tree, about 20 ft above ground. Utters single "Sit"s. Tree not a melancholic. Bird apparently picking up insects off leaves.

8:48. Considerably further on see single B&B (again). Other birds around, but not reacting with the B&B in any obvious manner. (Most of the other birds nearby seem to be migrant Catharus. They fly off in different direction from the B&B.)

8:55. Further on, (again) see single B&B feeding top tree. There is one Catharus feeding in same tree about 20 ft away. It flies away a minute or so after B&B arrives. B&B stays behind.

All these notes would seem to suggest that B&B's are less often associated with other species here than further north in the Central Andes.

Compsocoma, I.

November 3, 1962
Huanchaque
Western Andes

SEE TODAY'S NOTES ON MIXED FLOCKS

One or more of the bird(s) with the mixed flock today appeared to utter a series of notes which may have been homologous with the "tee see see see ..." series described above, p. 1, but slightly more elaborate. Each note of series separately at least slightly trisyllabic

Compsocoma, Nov. 3, 1962, II.

Each of these notes might possibly be transcribed by something like "Titsawee".

Compsocoma, I

November 6, 1962.
Mares

There is a small flock or family group BYB's here (see today's notes on mixed flocks). 6:10 a.m. One or more of the birds utters(s) rapid "Zee zee zee zee zee ...." notes in flight. Notes much shorter, more rapid than "Seee seee seee ...." of Butterumpids. Series of "Zee zee zee ...." also include many more notes than comparable Butterumpid series. (The notes transcribed as "Zee zee zee ...." here are certainly the same as the notes transcribed as "see see see ...." in my account of Compsocoma on Nov. 3, above. "z" or "s" may be equally accurate as transcriptions.)

"CN"s of the birds here could be transcribed as either "Jit" and/or "Juk". Uttered singly or in little series of 2 or 3 notes.

Birds here are still feeding on "berries" of arboreal melastome.

6:50. Have seen same group again & again. Probably includes at least 5 birds.

Series "Zee zee zee ...." notes extremely variable. Sometimes slow, sometimes very long sometimes, apparently, accelerated into trill. Usually or always uttered in flight or as landing call. Sometimes, perhaps usually, "greeting". Notes ordinarily intergrade with "CN"s. Various, in short series, might sometimes be transcribed as "Whit"s. Typical series extremely variable. Longer series usually, but probably not always, more rapid than shorter series

Compsothlypidae, Nov 6, 1902, II.

Thus group seems to have quite limited home range.
None of the birds are in conspicuous juvenile plumage.
I suppose this species is quite closely related to Basileuterus rufifrons.

A common sequence of notes is a few "CW"s, starting slow, and then accelerating into "ZeeZeeZee..."